SAMSUNG ELECTRONICS

DUAL BAND Mobile Cellular Phone

SGH-R220

SERVICE Manual

DUAL BAND MOBILE CELLULAR PHONE

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Samsung Electronics Co.,Ltd.
Printed in Korea
03/2001 Rev 1.0
GH68-02128B

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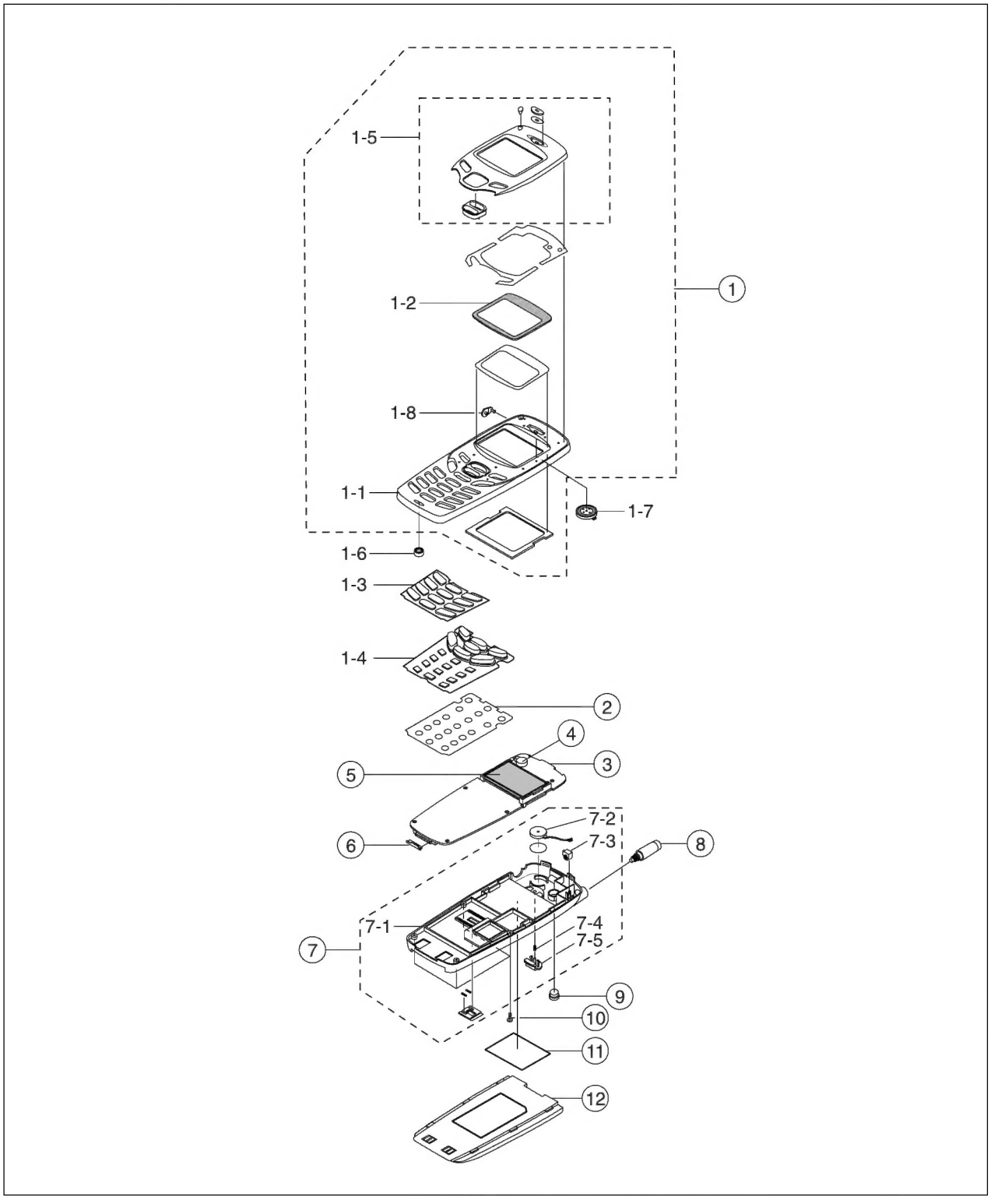
1. Exploded Views and Parts List

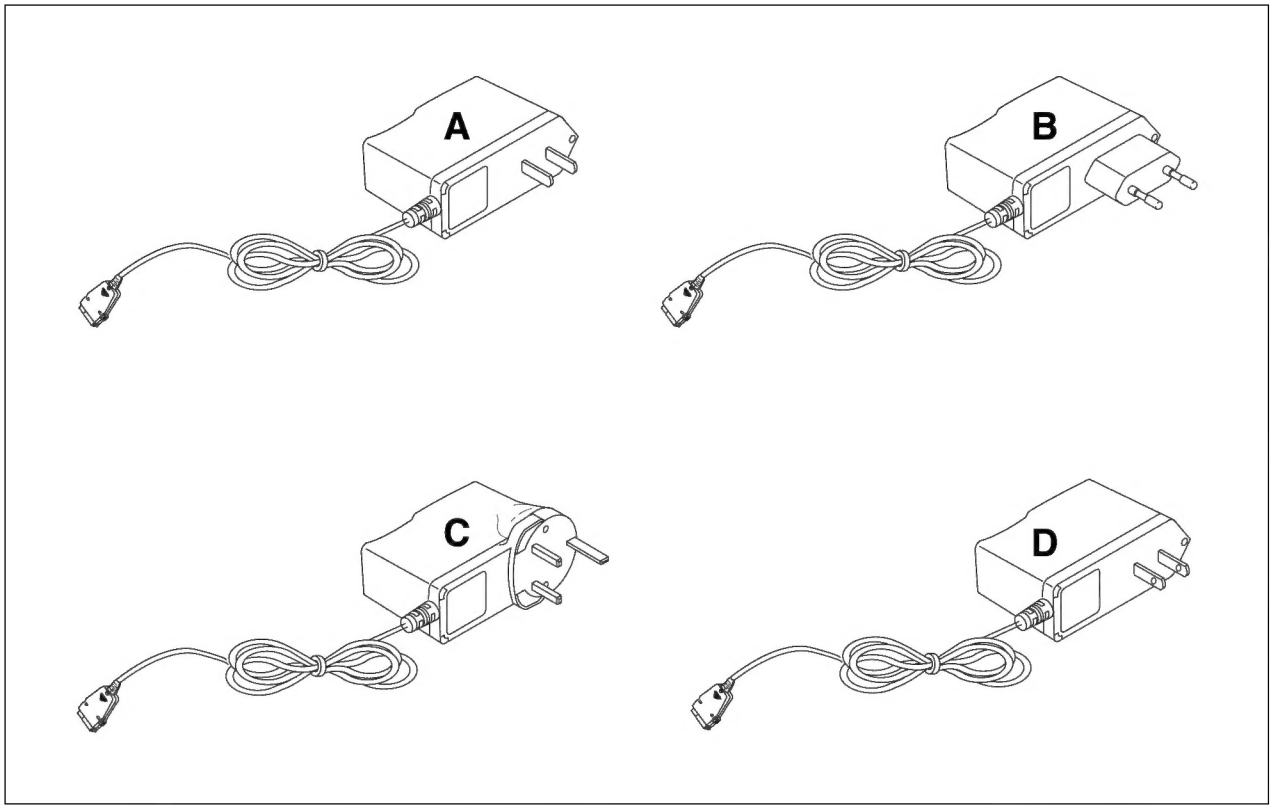
1-1 Main



1-2 Main Parts List

Location No.		Description	SEC CODE			Remark
			Navy Blue	Green	Dark Gray	
1		MEC-FRONT COVER	GH75-01162A	GH75-01162B	GH75-01162C	SA
	1-1	FRONT COVER	GH72-02670A	GH72-02670B	GH72-02670C	SNA
	1-2	WINDOW LCD	GH72-02672A	GH72-02672A	GH72-02672A	SNA
	1-3	FI KEY	GH72-02782A	GH72-02782A	GH72-02782A	SA
	1-4	MEC-KEYPAD	GH75-01164A	GH75-01164A	GH75-01164A	SA
	1-5	MEC-DUMMY COVER	GH75-01163A	GH75-01163A	GH75-01163A	SNA
	1-6	MIC	GH59-00240B	GH59-00240B	GH59-00240B	SA
	1-7	SPEAKER	3001-001233	3001-001233	3001-001233	SA
	1-8	EARPHONE COVER	GH73-00757A	GH73-00757B	GH73-00757C	SNA
2		DOME SHEET	GH72-02984A	GH72-02984A	GH72-02984A	SA
3		MAIN PBA	GH92-01202A	GH92-01202A	GH92-01202A	SA
4		BUZZER	3002-001098	3002-001098	3002-001098	SA
5		DISPLAY LCD	GH07-00075B	GH07-00075B	GH07-00075B	SA
6		I/F COVER	GH73-00758A	GH73-00758B	GH73-00758C	SA
7		MEC-REAR COVER	GH75-01165A	GH75-01165B	GH75-01165C	SA
	7-1	REAR COVER	GH72-02674A	GH72-02674B	GH72-02674C	SNA
	7-2	VIBRATOR	GH31-00019A	GH31-00019A	GH31-00019A	SA
	7-3	BRACKET-ANT	GH71-00505A	GH71-00505A	GH71-00505A	SNA
	7-4	SPRING LOCKER	GH70-10633A	GH70-10633A	GH70-10633A	SNA
	7-5	LOCKER MAIN	GH72-02676A	GH72-02676B	GH72-02676C	SNA
8		ANTENNA	GH42-00120C	GH42-00120B	GH42-00120A	SA
9		R/F COVER	GH73-00759A	GH73-00759A	GH73-00759A	SA
10		SCREW-MACHINE	6001-001346	6001-001346	6001-001346	SA
11		LABEL	GH68-02110A	GH68-02110A	GH68-02110A	SA
12		BATTERY	GH43-00369A	GH43-00369B	GH43-00369C	SA

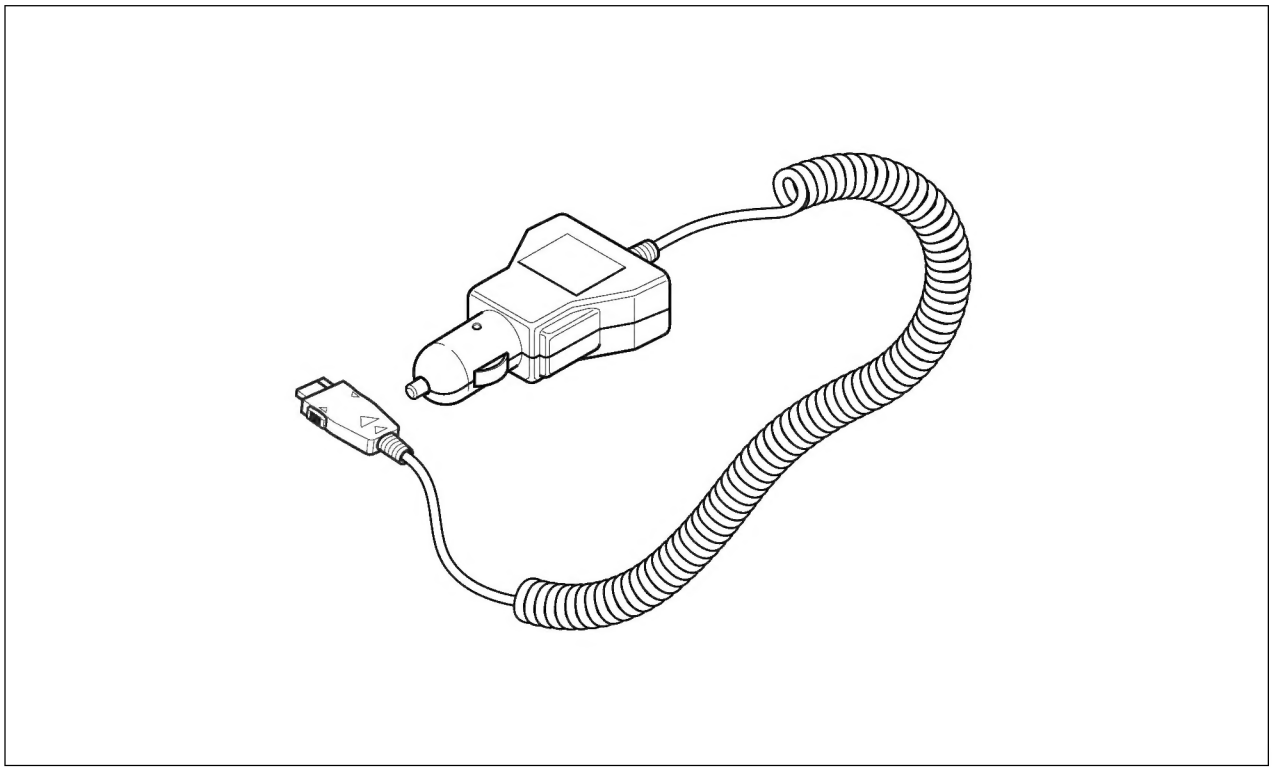
1-3 Travel Adapter



1-4 Travel Adapter Parts List

TYPE	SEC CODE	REMARK
A	GH44-00171A	CHINA
B	GH44-00184A	EUROPE
C	GH44-00171C	UNITED KINGDOM
D	Gh44-00171E	TAIWAN

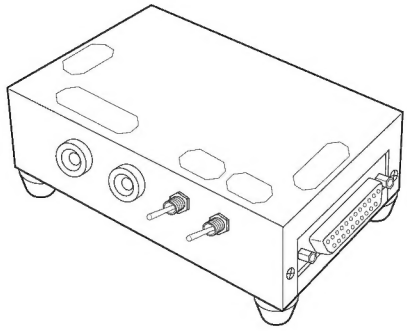
1-5 Ciger Light Adapter



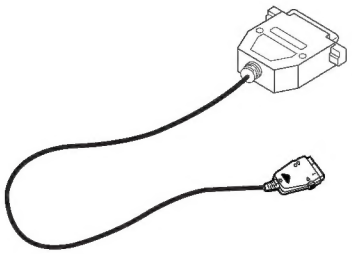
1-6 Ciger Light Adapter Parts List

DESCRIPTION	SEC CODE	REMARK
Ciger Light Adapter Code	GH44-00170A	BLACK

1-7 Test Jig



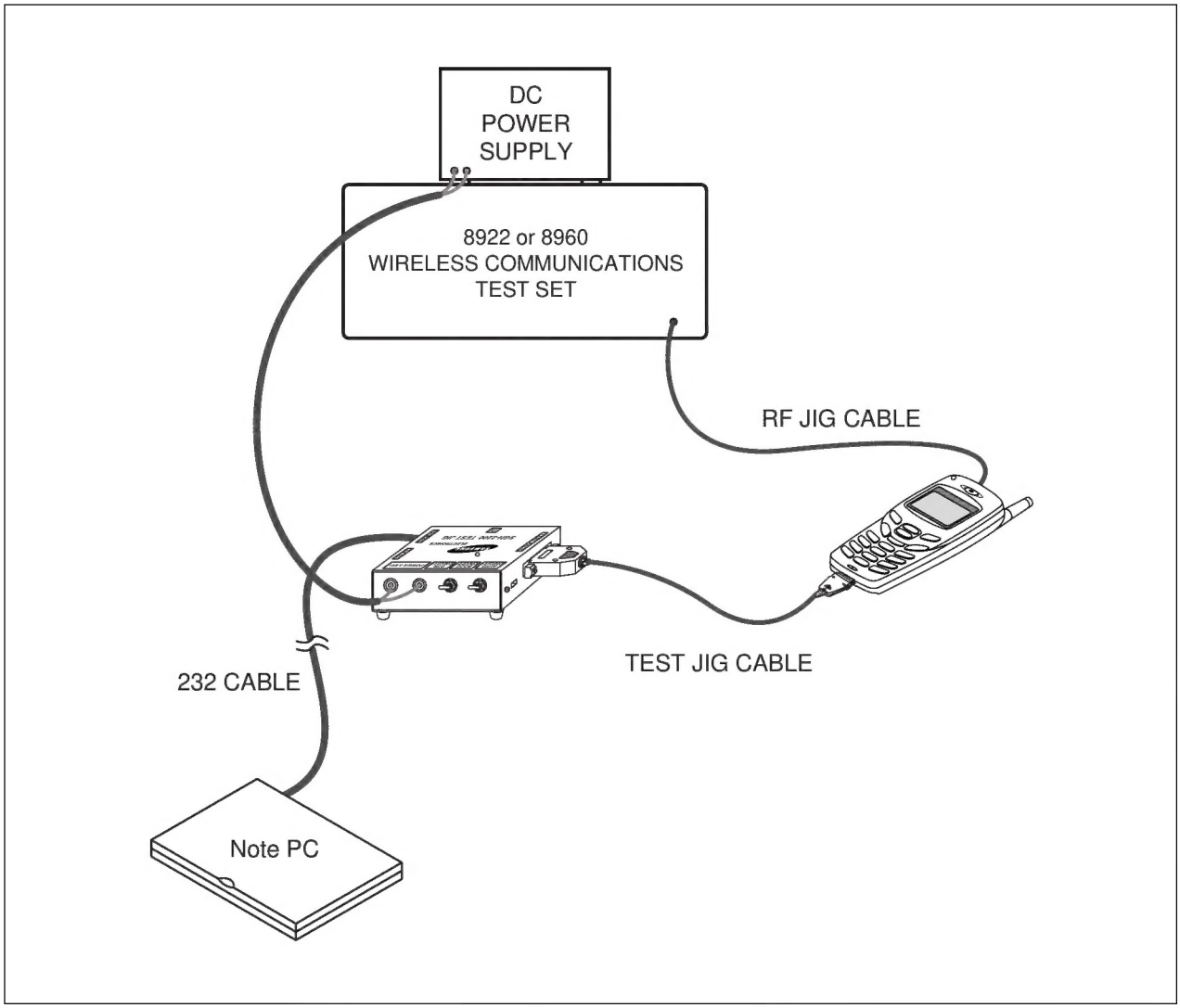
TEST JIG	GH80-10508A



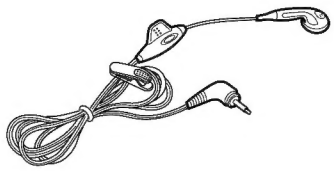
TEST JIG CABLE	GH39-00079A

RF CABLE	GH39-00090A

1-7-1 Test Jig

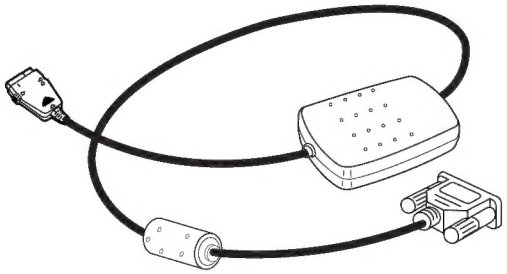

DC
POWER
SUPPLY
8922 or 8960
WIRELESS COMMUNICATIONS
TEST SET
RF JIG CABLE
TEST JIG CABLE
232 CABLE
Note PC

1-8 EAR Microphone



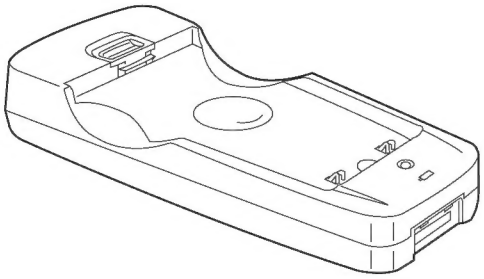
EAR MICROPHONE	GH59-00225B

1-9 Data Kit



DATA KIT	GH39-00078A

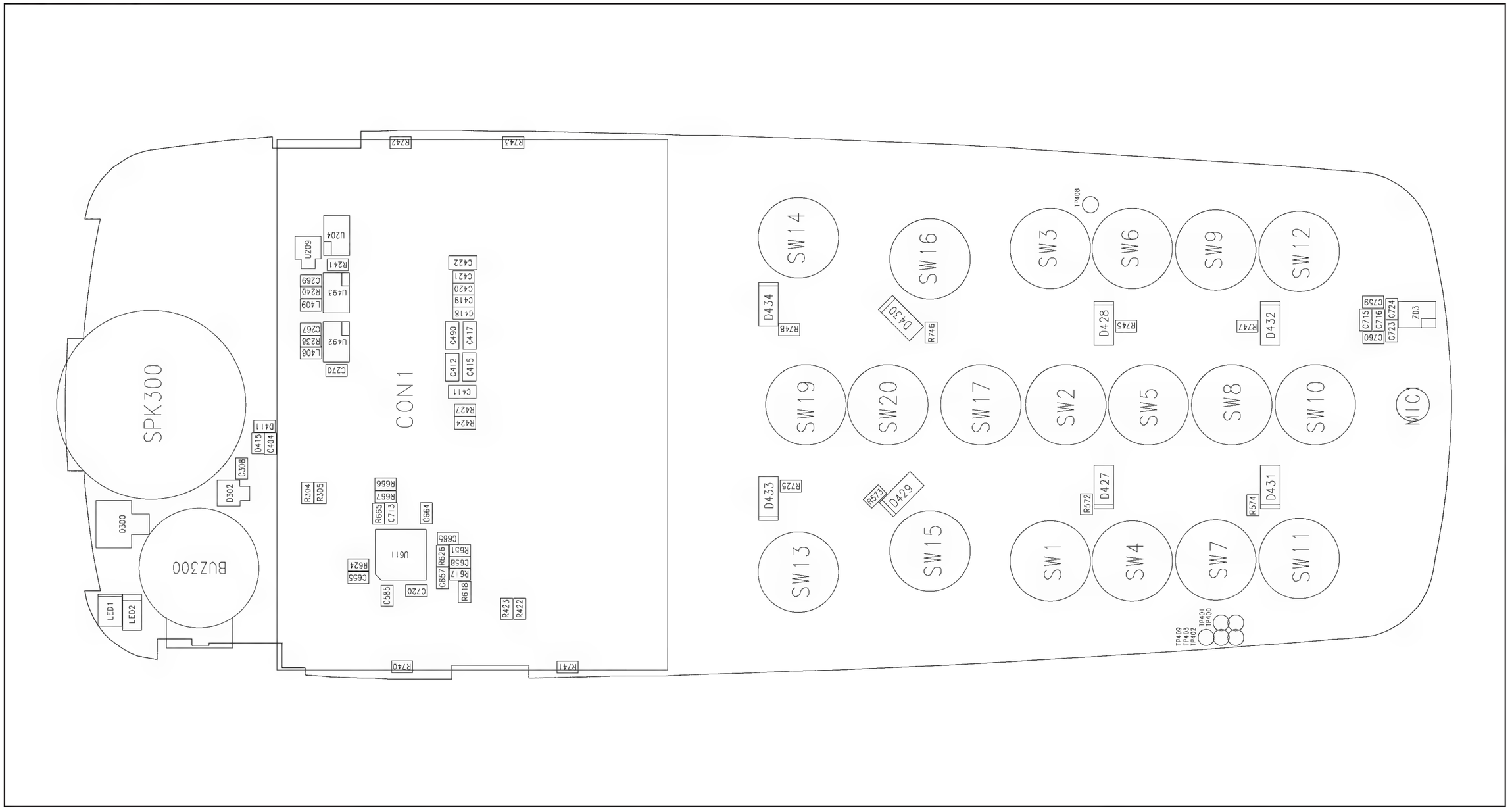
1-10 Battery Charger



BATTERY CHAGER	GH44-00221A

2. PCB Diagrams

2-1 Main Top



2-2 Main Bottom

3. Electrical Parts List

3-1 Main Parts List Top

SEC CODE	Reference	the name of an article	Part Description
0401-001033	D441	DIODE-SWITCHING	“MCL4154,25V,200mA,M-MELF,TP”
0406-001083	D406	DIODE-TVS	“-,6.1/-/7.2V,150W,SOT-323-5L”
0406-001083	D407	DIODE-TVS	“-,6.1/-/7.2V,150W,SOT-323-5L”
0406-001083	D408	DIODE-TVS	“-,6.1/-/7.2V,150W,SOT-323-5L”
0406-001083	ZD1	DIODE-TVS	“-,6.1/-/7.2V,150W,SOT-323-5L”
0406-001083	ZD2	DIODE-TVS	“-,6.1/-/7.2V,150W,SOT-323-5L”
0406-001083	ZD3	DIODE-TVS	“-,6.1/-/7.2V,150W,SOT-323-5L”
0406-001083	ZD2	DIODE-TVS	“-,6.1/-/7.2V,150W,SOT-323-5L”
0406-001083	ZD3	DIODE-TVS	“-,6.1/-/7.2V,150W,SOT-323-5L”
0407-001002	D302	DIODE-ARRAY	“DAN222,80V,300mA,CA2-3,EM3”
0407-001002	D401	DIODE-ARRAY	“DAN222,80V,300mA,CA2-3,EM3”
0407-001007	D304	DIODE-ARRAY	“UMN1,80V,25mA,CA4-2,UM5,TR”
0501-000162	Q400	TR-SMALL SIGNAL	“2SA1576,PNP,200MW,SOT-323,TP”
0501-000162	Q404	TR-SMALL SIGNAL	“2SA1576,PNP,200MW,SOT-323,TP”
0501-000225	Q100	TR-SMALL SIGNAL	“2SC4617,NPN,200mW,EM3,TP,120-5”
0501-002011	Q300	TR-SMALL SIGNAL	“2SD2114K,NPN,200mW,SOT-23,TP,8”
0501-002011	Q403	TR-SMALL SIGNAL	“2SD2114K,NPN,200mW,SOT-23,TP,8”
0502-001201	Q405	TR-POWER	“ZXT13P20DE6,PNP,1100MW,SOT-23-6”
0504-000167	Q409	TR-DIGITAL	“RN1102,NPN,100MW,10K/10K,SSM,TP”
0504-000167	U615	TR-DIGITAL	“RN1102,NPN,100MW,10K/10K,SSM,TP”
0504-001012	Q406	TR-DIGITAL	“DTC114YE,NPN,150MW,10K/47K,EMT3,TP”
0504-001012	Q407	TR-DIGITAL	“DTC114YE,NPN,150MW,10K/47K,EMT3,TP”
0504-001012	Q408	TR-DIGITAL	“DTC114YE,NPN,150MW,10K/47K,EMT3,TP”
0504-001012	U209	TR-DIGITAL	“DTC114YE,NPN,150MW,10K/47K,EMT3,TP”
0504-001021	U616	TR-DIGITAL	“DTB113ZK,PNP,200MW,10K,SC-59,TP”
0504-001058	U204	TR-DIGITAL	“RN4985,NPN/PNP,200mW,2.2Kohm”
0504-001058	U465	TR-DIGITAL	“RN4985,NPN/PNP,200mW,2.2Kohm”
0504-001058	U492	TR-DIGITAL	“RN4985,NPN/PNP,200mW,2.2Kohm”
0504-001058	U493	TR-DIGITAL	“RN4985,NPN/PNP,200mW,2.2Kohm”
0505-001332	Q401	FET-SILICON	“FDG6301,N,25V,0.22A,4OHM,.3W”
0505-001376	U474	FET-SILICON	“FDC6329L,N/P,8V,2.5A,-,0.7W,SC-74”
0505-001570	Q102	FET-SILICON	“-,N/P,-,-,-,0.4W,SC70-6”
0505-001570	Q402	FET-SILICON	“-,N/P,-,-,-,0.4W,SC70-6”
0506-001004	U309	TR-ARRAY	“UMC5N,NPN/PNP,2,50V,-,-100mA,3”
0601-001402	LED1	LED	“CHIP,RED/Y-GRN,1.2x1.5mm”
0601-001547	D427	LED	“CHIP,BLUE,1.1X0.8MM,468NM”
0601-001547	D428	LED	“CHIP,BLUE,1.1X0.8MM,468NM”
0601-001547	D429	LED	“CHIP,BLUE,1.1X0.8MM,468NM”

SEC CODE	Reference	the name of an article	Part Description
0601-001547	D430	LED	“CHIP,BLUE,1.1X0.8MM,468NM”
0601-001547	D431	LED	“CHIP,BLUE,1.1X0.8MM,468NM”
0601-001547	D432	LED	“CHIP,BLUE,1.1X0.8MM,468NM”
0601-001547	D433	LED	“CHIP,BLUE,1.1X0.8MM,468NM”
0601-001547	D434	LED	“CHIP,BLUE,1.1X0.8MM,468NM”
0601-001547	LED2	LED	“CHIP,BLUE,1.1X0.8MM,468NM”
1103-001185	U617	IC-EEPROM	“24A2561,32Kx8Bit,TSSOP,8P,-,-,1.8V”
1106-001326	U464	IC-SRAM	“616FU4110,256Kx16Bit,uBGA,48P,322MIL”
1107-001304	U466	IC-FLASH MEMORY	“AM29DL162,2MX8BIT,FBGA,48P,-,90NS”
1201-001785	U476	IC-POWER AMP	“08122,-,8P,-,DUAL,34DB,-,7V”
1203-001204	U470	IC-VOLTAGE REGULATOR	“2981,SOT-23,5P,59MIL,PLASTIC,3”
1203-001204	U621	IC-VOLTAGE REGULATOR	“2981,SOT-23,5P,59MIL,PLASTIC,3”
1203-001454	U101	IC-VOLTAGE REGULATOR	“2981,SOT-23,5P,59MIL,PLASTIC,3”
1203-001454	U102	IC-VOLTAGE REGULATOR	“2981,SOT-23,5P,59MIL,PLASTIC,3”
1203-001454	U613	IC-VOLTAGE REGULATOR	“2981,SOT-23,5P,59MIL,PLASTIC,3”
1203-001454	U619	IC-VOLTAGE REGULATOR	“2981,SOT-23,5P,59MIL,PLASTIC,3”
1203-001454	U620	IC-VOLTAGE REGULATOR	“2981,SOT-23,5P,59MIL,PLASTIC,3”
1203-002127	U614	IC-BATTERY	“1734,SOT-23,6P,150MIL,PLASTIC”
1203-002247	U475	IC-VOL. DETECTOR	“S-809,SOT-23-5,5P,-,-,-,150MW”
1205-001881	U618	IC-COMM. CONTROLLER	“VP40575,BGA,180P,472MIL,PLASTIC”
1205-001935	U454	IC-TRANSCEIVER	“HD155128TF,TP,56P,-,-,3V,400mW”
1209-001337	U478	IC-PLL/SYNTHESISER	“SI4133G-XM2R,LCC,28P”
1209-001379	U611	“IC-ETC, LINEAR”	“HD155173ANPEL,-,16P,-,-,3.4V”
1404-001005	TH1	THERMISTOR-NTC	“47Kohm,5%,4050K,2.0mW/C,TP”
1405-001018	D419	VARISTOR	“14V,-,1.6x0.8mm,TP”
1405-001018	D420	VARISTOR	“14V,-,1.6x0.8mm,TP”
1405-001018	D424	VARISTOR	“14V,-,1.6x0.8mm,TP”
1405-001093	D411	VARISTOR	“14V,20A,1x0.5x0.6mm,TP”
1405-001093	D415	VARISTOR	“14V,20A,1x0.5x0.6mm,TP”
1405-001093	D421	VARISTOR	“14V,20A,1x0.5x0.6mm,TP”
1405-001093	D422	VARISTOR	“14V,20A,1x0.5x0.6mm,TP”
1405-001093	D425	VARISTOR	“14V,20A,1x0.5x0.6mm,TP”
1405-001093	D442	VARISTOR	“14V,20A,1x0.5x0.6mm,TP”
1405-001093	D443	VARISTOR	“14V,20A,1x0.5x0.6mm,TP”
2007-000138	R200	R-CHIP	“100ohm,5%,1/16W,DA,TP,1005”
2007-000138	R321	R-CHIP	“100ohm,5%,1/16W,DA,TP,1005”
2007-000139	R203	R-CHIP	“220ohm,5%,1/16W,DA,TP,1005”
2007-000139	R204	R-CHIP	“220ohm,5%,1/16W,DA,TP,1005”
2007-000139	R444	R-CHIP	“220ohm,5%,1/16W,DA,TP,1005”
2007-000139	R447	R-CHIP	“220ohm,5%,1/16W,DA,TP,1005”
2007-000139	R745	R-CHIP	“220ohm,5%,1/16W,DA,TP,1005”
2007-000139	R572	R-CHIP	“220ohm,5%,1/16W,DA,TP,1005”

SEC CODE	Reference	the name of an article	Part Description
2007-000139	R746	R-CHIP	“220ohm,5%,1/16W,DA,TP,1005”
2007-000139	R573	R-CHIP	“220ohm,5%,1/16W,DA,TP,1005”
2007-000139	R747	R-CHIP	“220ohm,5%,1/16W,DA,TP,1005”
2007-000139	R574	R-CHIP	“220ohm,5%,1/16W,DA,TP,1005”
2007-000139	R748	R-CHIP	“220ohm,5%,1/16W,DA,TP,1005”
2007-000139	R725	R-CHIP	“220ohm,5%,1/16W,DA,TP,1005”
2007-000140	R106	R-CHIP	“1Kohm,5%,1/16W,DA,TP,1005”
2007-000140	R575	R-CHIP	“1Kohm,5%,1/16W,DA,TP,1005”
2007-000140	R584	R-CHIP	“1Kohm,5%,1/16W,DA,TP,1005”
2007-000140	R738	R-CHIP	“1Kohm,5%,1/16W,DA,TP,1005”
2007-000141	R103	R-CHIP	“2.2Kohm,5%,1/16W,DA,TP,1005”
2007-000141	R223	R-CHIP	“2.2Kohm,5%,1/16W,DA,TP,1005”
2007-000141	R433	R-CHIP	“2.2Kohm,5%,1/16W,DA,TP,1005”
2007-000141	R434	R-CHIP	“2.2Kohm,5%,1/16W,DA,TP,1005”
2007-000142	R402	R-CHIP	“2.7Kohm,5%,1/16W,DA,TP,1005”
2007-000143	R305	R-CHIP	“4.7Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R101	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R112	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R238	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R240	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R241	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R303	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R313	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R315	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R348	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R424	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R427	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R430	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R435	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R438	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R450	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R461	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R526	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R527	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R535	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R554	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R558	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R604	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R651	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R654	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R655	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000148	R661	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”

SEC CODE	Reference	the name of an article	Part Description
2007-000148	R723	R-CHIP	“10Kohm,5%,1/16W,DA,TP,1005”
2007-000152	R429	R-CHIP	“20Kohm,5%,1/16W,DA,TP,1005”
2007-000153	R213	R-CHIP	“22Kohm,5%,1/16W,DA,TP,1005”
2007-000155	R104	R-CHIP	“27Kohm,5%,1/16W,DA,TP,1005”
2007-000157	R441	R-CHIP	“47Kohm,5%,1/16W,DA,TP,1005”
2007-000157	R442	R-CHIP	“47Kohm,5%,1/16W,DA,TP,1005”
2007-000157	R443	R-CHIP	“47Kohm,5%,1/16W,DA,TP,1005”
2007-000159	R656	R-CHIP	“56Kohm,5%,1/16W,DA,TP,1005”
2007-000162	R304	R-CHIP	“100Kohm,5%,1/16W,DA,TP,1005”
2007-000162	R316	R-CHIP	“100Kohm,5%,1/16W,DA,TP,1005”
2007-000162	R422	R-CHIP	“100Kohm,5%,1/16W,DA,TP,1005”
2007-000162	R423	R-CHIP	“100Kohm,5%,1/16W,DA,TP,1005”
2007-000162	R432	R-CHIP	“100Kohm,5%,1/16W,DA,TP,1005”
2007-000162	R437	R-CHIP	“100Kohm,5%,1/16W,DA,TP,1005”
2007-000162	R460	R-CHIP	“100Kohm,5%,1/16W,DA,TP,1005”
2007-000162	R555	R-CHIP	“100Kohm,5%,1/16W,DA,TP,1005”
2007-000162	R579	R-CHIP	“100Kohm,5%,1/16W,DA,TP,1005”
2007-000162	R583	R-CHIP	“100Kohm,5%,1/16W,DA,TP,1005”
2007-000162	R605	R-CHIP	“100Kohm,5%,1/16W,DA,TP,1005”
2007-000162	R606	R-CHIP	“100Kohm,5%,1/16W,DA,TP,1005”
2007-000168	R440	R-CHIP	“470Kohm,5%,1/16W,DA,TP,1005”
2007-000168	R735	R-CHIP	“470Kohm,5%,1/16W,DA,TP,1005”
2007-000172	R220	R-CHIP	“10ohm,5%,1/16W,DA,TP,1005”
2007-000172	R224	R-CHIP	“10ohm,5%,1/16W,DA,TP,1005”
2007-000172	R577	R-CHIP	“10ohm,5%,1/16W,DA,TP,1005”
2007-000172	R578	R-CHIP	“10ohm,5%,1/16W,DA,TP,1005”
2007-000172	R740	R-CHIP	“10ohm,5%,1/16W,DA,TP,1005”
2007-000172	R741	R-CHIP	“10ohm,5%,1/16W,DA,TP,1005”
2007-000172	R742	R-CHIP	“10ohm,5%,1/16W,DA,TP,1005”
2007-000172	R743	R-CHIP	“10ohm,5%,1/16W,DA,TP,1005”
2007-000174	R123	R-CHIP	“47ohm,5%,1/16W,DA,TP,1005”
2007-000174	R569	R-CHIP	“47ohm,5%,1/16W,DA,TP,1005”
2007-000242	R582	R-CHIP	“1.5Kohm,5%,1/16W,DA,TP,1005”
2007-000982	R624	R-CHIP	“5.6Kohm,5%,1/16W,DA,TP,1005”
2007-001244	R105	R-CHIP	“91Kohm,5%,1/16W,DA,TP,1005”
2007-001292	R202	R-CHIP	“33ohm,5%,1/16W,DA,TP,1005”
2007-001298	R221	R-CHIP	“51ohm,5%,1/16W,DA,TP,1005”
2007-001298	R724	R-CHIP	“51ohm,5%,1/16W,DA,TP,1005”
2007-001301	R210	R-CHIP	“68ohm,5%,1/16W,DA,TP,1005”
2007-001301	R665	R-CHIP	“68ohm,5%,1/16W,DA,TP,1005”
2007-001301	R666	R-CHIP	“68ohm,5%,1/16W,DA,TP,1005”
2007-001305	R211	R-CHIP	“120ohm,5%,1/16W,DA,TP,1005”

SEC CODE	Reference	the name of an article	Part Description
2007-001306	R667	R-CHIP	“150ohm,5%,1/16W,DA,TP,1005”
2007-001311	R218	R-CHIP	“270ohm,5%,1/16W,DA,TP,1005”
2007-002796	R445	R-CHIP	“510ohm,5%,1/16W,DA,TP,1005”
2007-002796	R446	R-CHIP	“510ohm,5%,1/16W,DA,TP,1005”
2007-002797	R107	R-CHIP	“560ohm,5%,1/16W,DA,TP,1005”
2007-002797	R117	R-CHIP	“560ohm,5%,1/16W,DA,TP,1005”
2007-002965	R217	R-CHIP	“15OHM,5%,1/16W,DA,TP,1005”
2007-002970	R728	R-CHIP	“56OHM,5%,1/16W,DA,TP,1005”
2007-007009	R727	R-CHIP	“75OHM,5%,1/16W,DA,TP,1005”
2007-007015	R749	R-CHIP	“13KOHM,5%,1/16W,DA,TP,1005”
2007-007095	R726	R-CHIP	“390OHM,5%,1/16W,DA,TP,1005”
2007-007107	R658	R-CHIP	“100Kohm,1%,1/16W,DA,TP,1005”
2007-007142	R617	R-CHIP	“10Kohm,1%,1/16W,DA,TP,1005”
2007-007142	R618	R-CHIP	“10Kohm,1%,1/16W,DA,TP,1005”
2007-007311	R626	R-CHIP	“22Kohm,1%,1/16W,DA,TP,1005”
2007-007317	R452	R-CHIP	“2.2Kohm,1%,1/16W,DA,TP,1005”
2007-007317	R453	R-CHIP	“2.2Kohm,1%,1/16W,DA,TP,1005”
2007-007317	R454	R-CHIP	“2.2Kohm,1%,1/16W,DA,TP,1005”
2007-007317	R455	R-CHIP	“2.2Kohm,1%,1/16W,DA,TP,1005”
2007-007318	R456	R-CHIP	“1Kohm,1%,1/16W,DA,TP,1005”
2007-007318	R457	R-CHIP	“1Kohm,1%,1/16W,DA,TP,1005”
2007-007318	R458	R-CHIP	“1Kohm,1%,1/16W,DA,TP,1005”
2007-007318	R459	R-CHIP	“1Kohm,1%,1/16W,DA,TP,1005”
2007-007590	R659	R-CHIP	“82Kohm,1%,1/16W,DA,TP,1005”
2007-007771	R319	R-CHIP	“0OHM,5%,1/16W,DA,TP,1005”
2007-007771	R401	R-CHIP	“0OHM,5%,1/16W,DA,TP,1005”
2007-007771	R733	R-CHIP	“0OHM,5%,1/16W,DA,TP,1005”
2007-007771	R734	R-CHIP	“0OHM,5%,1/16W,DA,TP,1005”
2007-007771	R739	R-CHIP	“0OHM,5%,1/16W,DA,TP,1005”
2007-007771	R744	R-CHIP	“0OHM,5%,1/16W,DA,TP,1005”
2007-008117	R594	R-CHIP	“2.7Kohm,1%,1/16W,DA,TP,1005”
2011-001344	R320	R-NETWORK	“100ohm,5%,1/16W,L,CHIP,8P,TP”
2011-001344	R485	R-NETWORK	“100ohm,5%,1/16W,L,CHIP,8P,TP”
2011-001345	R449	R-NETWORK	“10Kohm,5%,1/16W,L,CHIP,8P,TP”
2203-000233	C144	“C-CERAMIC,CHIP”	“0.1nF,5%,50V,NP0,TP,1005”
2203-000233	C305	“C-CERAMIC,CHIP”	“0.1nF,5%,50V,NP0,TP,1005”
2203-000233	C452	“C-CERAMIC,CHIP”	“0.1nF,5%,50V,NP0,TP,1005”
2203-000233	C453	“C-CERAMIC,CHIP”	“0.1nF,5%,50V,NP0,TP,1005”
2203-000233	C454	“C-CERAMIC,CHIP”	“0.1nF,5%,50V,NP0,TP,1005”
2203-000233	C455	“C-CERAMIC,CHIP”	“0.1nF,5%,50V,NP0,TP,1005”
2203-000233	C658	“C-CERAMIC,CHIP”	“0.1nF,5%,50V,NP0,TP,1005”
2203-000233	C718	“C-CERAMIC,CHIP”	“0.1nF,5%,50V,NP0,TP,1005”

SEC CODE	Reference	the name of an article	Part Description
2203-000233	C719	“C-CERAMIC,CHIP”	“0.1nF,5%,50V,NP0,TP,1005”
2203-000254	C101	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C102	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C123	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C210	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C238	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C307	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C309	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C313	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C319	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C326	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C331	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C335	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C354	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C434	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C440	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C449	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C536	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C587	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C712	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C725	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C744	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000254	C745	“C-CERAMIC,CHIP”	“10nF,10%,16V,X7R,TP,1005,-”
2203-000278	C206	“C-CERAMIC,CHIP”	“0.01nF,0.5pF,50V,NP0,TP,1005”
2203-000278	C239	“C-CERAMIC,CHIP”	“0.01nF,0.5pF,50V,NP0,TP,1005”
2203-000311	C657	“C-CERAMIC,CHIP”	“0.12nF,5%,50V,NP0,TP,1005”
2203-000359	C212	“C-CERAMIC,CHIP”	“0.15nF,5%,50V,NP0,TP,1005”
2203-000386	C235	“C-CERAMIC,CHIP”	“0.015nF,5%,50V,NP0,TP,1005”
2203-000438	C138	“C-CERAMIC,CHIP”	“1nF,10%,50V,X7R,TP,1005,-”
2203-000438	C211	“C-CERAMIC,CHIP”	“1nF,10%,50V,X7R,TP,1005,-”
2203-000438	C221	“C-CERAMIC,CHIP”	“1nF,10%,50V,X7R,TP,1005,-”
2203-000438	C227	“C-CERAMIC,CHIP”	“1nF,10%,50V,X7R,TP,1005,-”
2203-000438	C229	“C-CERAMIC,CHIP”	“1nF,10%,50V,X7R,TP,1005,-”
2203-000438	C230	“C-CERAMIC,CHIP”	“1nF,10%,50V,X7R,TP,1005,-”
2203-000438	C240	“C-CERAMIC,CHIP”	“1nF,10%,50V,X7R,TP,1005,-”
2203-000438	C261	“C-CERAMIC,CHIP”	“1nF,10%,50V,X7R,TP,1005,-”
2203-000438	C270	“C-CERAMIC,CHIP”	“1nF,10%,50V,X7R,TP,1005,-”
2203-000438	C556	“C-CERAMIC,CHIP”	“1nF,10%,50V,X7R,TP,1005,-”
2203-000438	C557	“C-CERAMIC,CHIP”	“1nF,10%,50V,X7R,TP,1005,-”
2203-000438	C562	“C-CERAMIC,CHIP”	“1nF,10%,50V,X7R,TP,1005,-”
2203-000438	C580	“C-CERAMIC,CHIP”	“1nF,10%,50V,X7R,TP,1005,-”
2203-000438	C720	“C-CERAMIC,CHIP”	“1nF,10%,50V,X7R,TP,1005,-”

SEC CODE	Reference	the name of an article	Part Description
2203-000466	C575	"C-CERAMIC,CHIP"	"0.001nF,0.25pF,50V,NP0,TP,1005"
2203-000468	C747	"C-CERAMIC,CHIP"	"0.001nF,0.25pF,50V,NP0,TP,1608"
2203-000585	C110	"C-CERAMIC,CHIP"	"220pF,10%,50V,X7R,TP,1005,-"
2203-000585	C111	"C-CERAMIC,CHIP"	"220pF,10%,50V,X7R,TP,1005,-"
2203-000585	C112	"C-CERAMIC,CHIP"	"220pF,10%,50V,X7R,TP,1005,-"
2203-000585	C114	"C-CERAMIC,CHIP"	"220pF,10%,50V,X7R,TP,1005,-"
2203-000609	C203	"C-CERAMIC,CHIP"	"22nF,10%,50V,X7R,TP,2012"
2203-000628	C237	"C-CERAMIC,CHIP"	"0.022nF,5%,50V,NP0,TP,1005"
2203-000654	C585	"C-CERAMIC,CHIP"	"270pF,10%,50V,X7R,TP,1005,-"
2203-000654	C655	"C-CERAMIC,CHIP"	"270pF,10%,50V,X7R,TP,1005,-"
2203-000679	C200	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1005"
2203-000679	C232	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1005"
2203-000679	C262	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1005"
2203-000679	C267	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1005"
2203-000679	C269	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1005"
2203-000679	C540	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1005"
2203-000679	C555	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1005"
2203-000679	C569	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1005"
2203-000679	C586	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1005"
2203-000679	C665	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1005"
2203-000679	C713	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1005"
2203-000679	C740	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1005"
2203-000679	C741	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1005"
2203-000679	C752	"C-CERAMIC,CHIP"	"0.027nF,5%,50V,NP0,TP,1005"
2203-000696	C582	"C-CERAMIC,CHIP"	"0.002nF,0.25pF,50V,NP0,TP,1005"
2203-000812	C143	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C204	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C217	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C234	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C263	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C264	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C310	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C311	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C312	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C327	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C330	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C437	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C438	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C439	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C441	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C442	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"
2203-000812	C443	"C-CERAMIC,CHIP"	"0.033nF,5%,50V,NP0,TP,1005"

SEC CODE	Reference	the name of an article	Part Description
2203-000812	C448	“C-CERAMIC,CHIP”	“0.033nF,5%,50V,NP0,TP,1005”
2203-000812	C460	“C-CERAMIC,CHIP”	“0.033nF,5%,50V,NP0,TP,1005”
2203-000812	C664	“C-CERAMIC,CHIP”	“0.033nF,5%,50V,NP0,TP,1005”
2203-000812	C758	“C-CERAMIC,CHIP”	“0.033nF,5%,50V,NP0,TP,1005”
2203-000854	C244	“C-CERAMIC,CHIP”	“0.039nF,5%,50V,NP0,TP,1005”
2203-000854	C400	“C-CERAMIC,CHIP”	“0.039nF,5%,50V,NP0,TP,1005”
2203-000854	C401	“C-CERAMIC,CHIP”	“0.039nF,5%,50V,NP0,TP,1005”
2203-000854	C723	“C-CERAMIC,CHIP”	“0.039nF,5%,50V,NP0,TP,1005”
2203-000854	C724	“C-CERAMIC,CHIP”	“0.039nF,5%,50V,NP0,TP,1005”
2203-000854	C698	“C-CERAMIC,CHIP”	“0.039nF,5%,50V,NP0,TP,1005”
2203-000854	C699	“C-CERAMIC,CHIP”	“0.039nF,5%,50V,NP0,TP,1005”
2203-000995	C447	“C-CERAMIC,CHIP”	“0.047nF,5%,50V,NP0,TP,1005”
2203-001017	C716	“C-CERAMIC,CHIP”	“0.004nF,0.25pF,50V,NP0,TP,1005”
2203-001017	C759	“C-CERAMIC,CHIP”	“0.004nF,0.25pF,50V,NP0,TP,1005”
2203-001017	C760	“C-CERAMIC,CHIP”	“0.004nF,0.25pF,50V,NP0,TP,1005”
2203-001020	C538	“C-CERAMIC,CHIP”	“0.004nF,0.25pF,50V,NP0,TP,1608”
2203-001153	C215	“C-CERAMIC,CHIP”	“0.068nF,5%,50V,NP0,TP,1005”
2203-001153	C494	“C-CERAMIC,CHIP”	“0.068nF,5%,50V,NP0,TP,1005”
2203-002525	C126	“C-CERAMIC,CHIP”	“0.56nF,10%,50V,X7R,TP,1005”
2203-002525	C137	“C-CERAMIC,CHIP”	“0.56nF,10%,50V,X7R,TP,1005”
2203-002525	C481	“C-CERAMIC,CHIP”	“0.56nF,10%,50V,X7R,TP,1005”
2203-002668	C214	“C-CERAMIC,CHIP”	“0.0005nF,0.1pF,50V,NP0,TP,1005”
2203-002668	C242	“C-CERAMIC,CHIP”	“0.0005nF,0.1pF,50V,NP0,TP,1005”
2203-003054	C329	“C-CERAMIC,CHIP”	“0.009nF,0.25pF,50V,NP0,TP,1005”
2203-003054	C444	“C-CERAMIC,CHIP”	“0.009nF,0.25pF,50V,NP0,TP,1005”
2203-003054	C445	“C-CERAMIC,CHIP”	“0.009nF,0.25pF,50V,NP0,TP,1005”
2203-003054	C539	“C-CERAMIC,CHIP”	“0.009nF,0.25pF,50V,NP0,TP,1005”
2203-003054	C757	“C-CERAMIC,CHIP”	“0.009nF,0.25pF,50V,NP0,TP,1005”
2203-005050	C600	“C-CERAMIC,CHIP”	“0.0018nF,0.25pF,50V,NP0,TP,1005”
2203-005052	C213	“C-CERAMIC,CHIP”	“0.0033nF,0.25pF,50V,NP0,TP,1005”
2203-005061	C106	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C107	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C301	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C308	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C332	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C418	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C419	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C420	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C421	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C427	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C534	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C545	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”

SEC CODE	Reference	the name of an article	Part Description
2203-005061	C578	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C588	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C597	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C701	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C706	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005061	C711	“C-CERAMIC,CHIP”	“100nF,+80-20%,16V,Y5V,TP,1005”
2203-005065	C108	“C-CERAMIC,CHIP”	“1000nF,+80-20%,10V,Y5V,TP,1608”
2203-005065	C125	“C-CERAMIC,CHIP”	“1000nF,+80-20%,10V,Y5V,TP,1608”
2203-005065	C318	“C-CERAMIC,CHIP”	“1000nF,+80-20%,10V,Y5V,TP,1608”
2203-005065	C403	“C-CERAMIC,CHIP”	“1000nF,+80-20%,10V,Y5V,TP,1608”
2203-005065	C411	“C-CERAMIC,CHIP”	“1000nF,+80-20%,10V,Y5V,TP,1608”
2203-005065	C412	“C-CERAMIC,CHIP”	“1000nF,+80-20%,10V,Y5V,TP,1608”
2203-005065	C415	“C-CERAMIC,CHIP”	“1000nF,+80-20%,10V,Y5V,TP,1608”
2203-005065	C417	“C-CERAMIC,CHIP”	“1000nF,+80-20%,10V,Y5V,TP,1608”
2203-005065	C422	“C-CERAMIC,CHIP”	“1000nF,+80-20%,10V,Y5V,TP,1608”
2203-005065	C431	“C-CERAMIC,CHIP”	“1000nF,+80-20%,10V,Y5V,TP,1608”
2203-005065	C490	“C-CERAMIC,CHIP”	“1000nF,+80-20%,10V,Y5V,TP,1608”
2203-005065	C705	“C-CERAMIC,CHIP”	“1000nF,+80-20%,10V,Y5V,TP,1608”
2203-005065	C748	“C-CERAMIC,CHIP”	“1000nF,+80-20%,10V,Y5V,TP,1608”
2203-005065	C749	“C-CERAMIC,CHIP”	“1000nF,+80-20%,10V,Y5V,TP,1608”
2203-005234	C596	“C-CERAMIC,CHIP”	“0.0012nF,0.25pF,50V,NP0,TP,1005”
2203-005382	C248	“C-CERAMIC,CHIP”	“0.006nF,0.1pF,50V,NP0,TP,1005”
2203-005383	C753	“C-CERAMIC,CHIP”	“7pF,0.1pF,50V,NPO,TP,1005,-”
2203-005383	C754	“C-CERAMIC,CHIP”	“7pF,0.1pF,50V,NPO,TP,1005,-”
2203-005383	C755	“C-CERAMIC,CHIP”	“7pF,0.1pF,50V,NPO,TP,1005,-”
2203-005444	C404	“C-CERAMIC,CHIP”	“0.003nF,0.1pF,50V,NP0,TP,1005”
2203-005446	C721	“C-CERAMIC,CHIP”	“0.0027nF,0.1pF,50V,NP0,TP,1005”
2203-005480	C450	“C-CERAMIC,CHIP”	“33nF,10%,10V,X7R,TP,1005,-”
2203-005480	C451	“C-CERAMIC,CHIP”	“33nF,10%,10V,X7R,TP,1005,-”
2203-005481	C459	“C-CERAMIC,CHIP”	“47nF,10%,10V,X7R,TP,1005,-”
2203-005482	C746	“C-CERAMIC,CHIP”	“100nF,10%,10V,X5R,TP,1005,-”
2203-005482	C751	“C-CERAMIC,CHIP”	“100nF,10%,10V,X5R,TP,1005,-”
2203-005503	C456	“C-CERAMIC,CHIP”	“0.18nF,5%,25V,NP0,TP,1005”
2203-005503	C457	“C-CERAMIC,CHIP”	“0.18nF,5%,25V,NP0,TP,1005”
2203-005552	C727	“C-CERAMIC,CHIP”	“0.0022nF,0.1pF,50V,NP0,TP,1005”
2301-001232	C202	“C-FILM,CHIP”	“470pF,5%,50V,TP,2012,-”
2404-001020	C710	“C-TA,CHIP”	“10uF,20%,10V,GP,TP,3216,3.2”
2404-001101	C220	“C-TA,CHIP”	“1uF,20%,16V,GP,TP,2012,-”
2404-001105	C105	“C-TA,CHIP”	“10UF,20%,6.3V,GP,TP,2012”
2404-001105	C117	“C-TA,CHIP”	“10UF,20%,6.3V,GP,TP,2012”
2404-001105	C124	“C-TA,CHIP”	“10UF,20%,6.3V,GP,TP,2012”
2404-001105	C145	“C-TA,CHIP”	“10UF,20%,6.3V,GP,TP,2012”

SEC CODE	Reference	the name of an article	Part Description
2404-001105	C306	“C-TA,CHIP”	“10UF,20%,6.3V,GP,TP,2012”
2404-001105	C328	“C-TA,CHIP”	“10UF,20%,6.3V,GP,TP,2012”
2404-001105	C535	“C-TA,CHIP”	“10UF,20%,6.3V,GP,TP,2012”
2404-001105	C708	“C-TA,CHIP”	“10UF,20%,6.3V,GP,TP,2012”
2404-001105	C750	“C-TA,CHIP”	“10UF,20%,6.3V,GP,TP,2012”
2404-001134	C436	“C-TA,CHIP”	“100UF,20%,6.3V,LZ,TP,4028”
2404-001134	C579	“C-TA,CHIP”	“100UF,20%,6.3V,LZ,TP,4028”
2404-001162	C446	“C-TA,CHIP”	“47uF,20%,4V,LZ,TP,3216”
2404-001267	C249	“C-TA,CHIP”	“220UF,20%,6.3V,-,TP,6032”
2703-001178	L594	INDUCTOR-SMD	“3.3nH,0.3nH,1x0.5x0.5mm”
2703-001180	L211	INDUCTOR-SMD	“15nH,5%,1x0.5x0.5mm”
2703-001257	L599	INDUCTOR-SMD	“3.9nH,0.3nH,1.6x0.8X0.8mm”
2703-001293	L200	INDUCTOR-SMD	“82nH,5%,1.6x0.8x0.8mm”
2703-001708	L406	INDUCTOR-SMD	“5.6nH,10%,1.0x0.5x0.5mm”
2703-001723	L408	INDUCTOR-SMD	“33nH,5%,1.0x0.5x0.5mm”
2703-001723	L409	INDUCTOR-SMD	“33nH,5%,1.0x0.5x0.5mm”
2703-001750	L402	INDUCTOR-SMD	“2.2NH,0.3NH,1.0X0.5X0.5MM”
2703-001751	L596	INDUCTOR-SMD	“3.9nH,0.3nH,1.0x0.5x0.5mm”
2703-001786	L404	INDUCTOR-SMD	“10NH,5%,1.0X0.5X0.5MM”
2703-001943	L600	INDUCTOR-SMD	“10nH,5%,1.0x0.5x0.5mm”
2703-001949	L595	INDUCTOR-SMD	“4.7nH,10%,1.0x0.5x0.5mm”
2703-001950	L204	INDUCTOR-SMD	“12nH,10%,1.0x0.5x0.5mm”
2703-001952	L209	INDUCTOR-SMD	“8.2nH,5%,1.0x0.5x0.5mm”
2703-001952	L218	INDUCTOR-SMD	“8.2nH,5%,1.0x0.5x0.5mm”
2703-001952	L597	INDUCTOR-SMD	“8.2nH,5%,1.0x0.5x0.5mm”
2703-002209	L212	INDUCTOR-SMD	“47NH,5%,1.6X0.8X0.8MM”
2703-002209	L213	INDUCTOR-SMD	“47NH,5%,1.6X0.8X0.8MM”
2703-002231	L201	INDUCTOR-SMD	“68NH,5%,1.6X0.8X0.8 MM”
2801-003856	X1	CRYSTAL-SMD	“0.032786MHz,20ppm,28-ACP,7pF”
2806-001239	U200	OSCILLATOR-VCO	“1748MHz,-,50ohm,TP,2.8V,-”
2809-001255	U100	VCTCX0	TCO-9133S
2901-001116	E200	FILTER-EMI SMD	“50V,0.3A,-,470pF,2x1.25x0.5mm,TP”
2904-001320	F200	FILTER-SAW	“225MHZ,60MHZ,-,TP,-,-”
2904-001325	F203	FILTER-SAW	“942.5MHZ,50MHZ,1.7DB(G),2.0DB(P)”
2904-001325	F204	FILTER-SAW	“942.5MHZ,50MHZ,1.7DB(G),2.0DB(P)”
2909-001146	U203	FILTER-DUPLEXER	“942.5MHZ,897.5MHZ,1.4/1.5DB,TP”
3002-001098	BUZ300	BUZZER-MAGNETIC	“94dB,3V,150mA,2700Hz,TP”
3301-001120	L602	CORE-FERRITE BEAD	“AB,30ohm,2x1.25x0.85mm,3000mA,TP”
3705-001226	CN1	CONNECTOR-COAXIAL	“-,JACK,75mohm,50ohm,0.45dB”
3709-001088	J402	CONNECTOR-CARD EDGE	“6P,2.54mm,SMD-S,AU”
3710-001105	M1	CONNECTOR-SOCKET	“2P,1R,1.27mm,SMD-S,AU”
3710-001595	J403	CONNECTOR-SOCKET	“18P,1R,0.5mm,SMD-A,AUF”

SEC CODE	Reference	the name of an article	Part Description
3722-001587	U400	JACK-PHONE	“6P,2.6PI,AG,BLK,-”
4302-001119	BAT1	BATTERY-LI(2ND)	“3V,0.1MAH,-,-,3.1V,-”
4709-001144	U318	COUPLER-DIRECTION	“897.5/1747.5MHZ,19DB/14DB,24DB”
GH07-00075B	LCD	LCD-SGHR220 LCD	“UG-12B98-FLHTX-A,128X64”
GH41-00181A	PCB	PCB-SGHR210 MAIN	“MR500,6L,-,0.8T,118X155MM”
GH61-00019A	A200	SPRING-ANT.CONTACT	“SGH-N105,BE-CU,-,-,-,-,-,-,GLD”

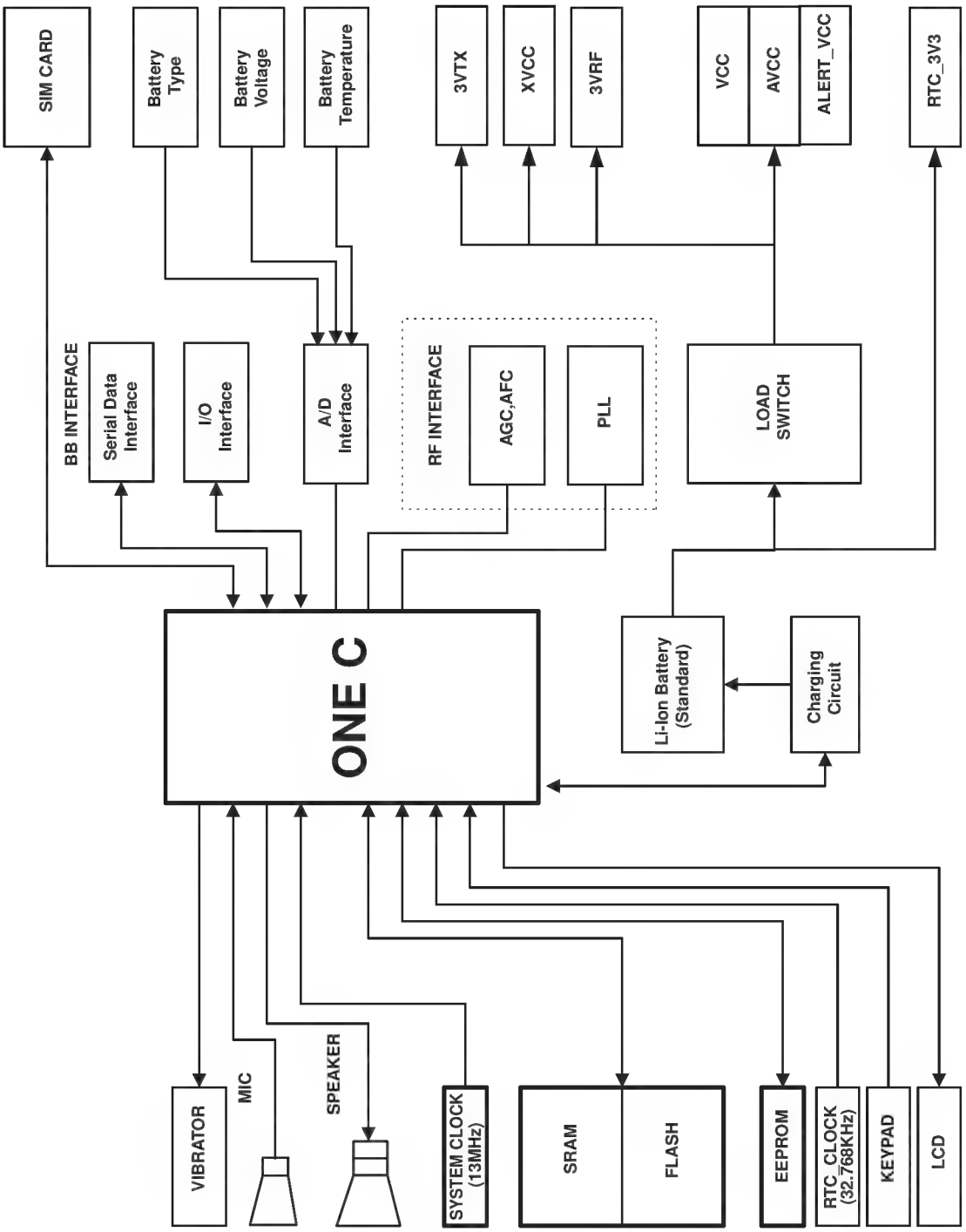
3-2 Main Parts List Bottom

NO	SEC CODE	Reference	Part Description	Vendor Part No.
1	0407-001002	D302	"DIODE-ARRAY,DAN222,80V,300mA,CA2-3,EM3"	DAN222
2	0501-002011	Q300	"TR-SMALL SIGNAL,2SD2114K,NPN,200mW,SOT-23"	2SD2114KT146V
3	0504-001012	U209	"TR-DIGITAL,DTC114YE,NPN,150MW,10K/47K"	DTC114YE
4	0504-001058	U204	"TR-DIGITAL,RN4985,NPN/PNP,200mW,2.2Kohm"	RN4985
5	0504-001058	U492	"TR-DIGITAL,RN4985,NPN/PNP,200mW,2.2Kohm"	RN4985
6	0504-001058	U493	"TR-DIGITAL,RN4985,NPN/PNP,200mW,2.2Kohm"	RN4985
7	0601-001402	LED1	"LED,CHIP,RED/Y-GRN,1.2x1.5mm,660/570nm"	CL165HR/YG-D-T
8	0601-001547	LED2	"LED,CHIP,BLUE,1.1X0.8MM,485NM"	SLSNNBL102TS
9	0601-001547	D433	"LED,CHIP,BLUE,1.2X0.8MM,480NM"	SLS-NNBL102TS
10	0601-001547	D434	"LED,CHIP,BLUE,1.2X0.8MM,480NM"	SLS-NNBL102TS
11	0601-001547	D427	"LED,CHIP,BLUE,1.2X0.8MM,480NM"	SLS-NNBL102TS
12	0601-001547	D428	"LED,CHIP,BLUE,1.2X0.8MM,480NM"	SLS-NNBL102TS
13	0601-001547	D429	"LED,CHIP,BLUE,1.2X0.8MM,480NM"	SLS-NNBL102TS
14	0601-001547	D430	"LED,CHIP,BLUE,1.2X0.8MM,480NM"	SLS-NNBL102TS
15	0601-001547	D431	"LED,CHIP,BLUE,1.2X0.8MM,480NM"	SLS-NNBL102TS
16	0601-001547	D432	"LED,CHIP,BLUE,1.2X0.8MM,480NM"	SLS-NNBL102TS
17	1209-001379	U611	"IC-ETC, LINEAR,16P,3.4V,240MW"	HD155173ANPEL
18	1405-001093	D411	"VARISTOR,14V,20A,1x0.5x0.6mm"	VC040214X500R
19	1405-001093	D415	"VARISTOR,14V,20A,1x0.5x0.6mm"	VC040214X500R
20	2007-000139	R725	"R-CHIP,220ohm,5%,1/16W,DA,TP,1005"	RK73K1ETP221J
21	2007-000139	R573	"R-CHIP,220ohm,5%,1/16W,DA,TP,1005"	RK73K1ETP221J
22	2007-000139	R572	"R-CHIP,220ohm,5%,1/16W,DA,TP,1005"	RK73K1ETP221J
23	2007-000139	R574	"R-CHIP,220ohm,5%,1/16W,DA,TP,1005"	RK73K1ETP221J
24	2007-000143	R305	"R-CHIP,4.7Kohm,5%,1/16W,DA,TP,1005"	RK73K1ETP472J
25	2007-000148	R238	"R-CHIP,10Kohm,5%,1/16W,DA,TP,1005"	RK73K1ETP103J
26	2007-000148	R240	"R-CHIP,10Kohm,5%,1/16W,DA,TP,1005"	RK73K1ETP103J
27	2007-000148	R241	"R-CHIP,10Kohm,5%,1/16W,DA,TP,1005"	RK73K1ETP103J
28	2007-000148	R424	"R-CHIP,10Kohm,5%,1/16W,DA,TP,1005"	RK73K1ETP103J
29	2007-000148	R427	"R-CHIP,10Kohm,5%,1/16W,DA,TP,1005"	RK73K1ETP103J
30	2007-000148	R651	"R-CHIP,10Kohm,5%,1/16W,DA,TP,1005"	RK73K1ETP103J
31	2007-000162	R304	"R-CHIP,100Kohm,5%,1/16W,DA,TP,1005"	RK73K1ETP104J
32	2007-000162	R422	"R-CHIP,100Kohm,5%,1/16W,DA,TP,1005"	RK73K1ETP104J
33	2007-000162	R423	"R-CHIP,100Kohm,5%,1/16W,DA,TP,1005"	RK73K1ETP104J
34	2007-000982	R624	"R-CHIP,5.6Kohm,5%,1/16W,DA,TP,1005"	RK73K1ETP562J
35	2007-001301	R665	"R-CHIP,68ohm,5%,1/16W,DA,TP,1005"	ERJ2GEJ680X
36	2007-001301	R666	"R-CHIP,68ohm,5%,1/16W,DA,TP,1005"	ERJ2GEJ680X
37	2007-001306	R667	"R-CHIP,150ohm,5%,1/16W,DA,TP,1005"	RK73K1ETP151J
38	2007-007142	R617	"R-CHIP,10Kohm,1%,1/16W,DA,TP,1005"	RK73H1ETP1002F
39	2007-007142	R618	"R-CHIP,10Kohm,1%,1/16W,DA,TP,1005"	RK73H1ETP1002F
40	2007-007311	R626	"R-CHIP,22Kohm,1%,1/16W,DA,TP,1005"	RK73H1ETP2202F
41	2007-007771	R729	"R-CHIP,0OHM,5%,1/16W,DA,TP,1005"	ERJ2GE0R00L
42	2203-000654	C655	"C-CERAMIC,CHIP,270pF,10%,50V,X7R,TP,1005"	C1005X7R1H271KT

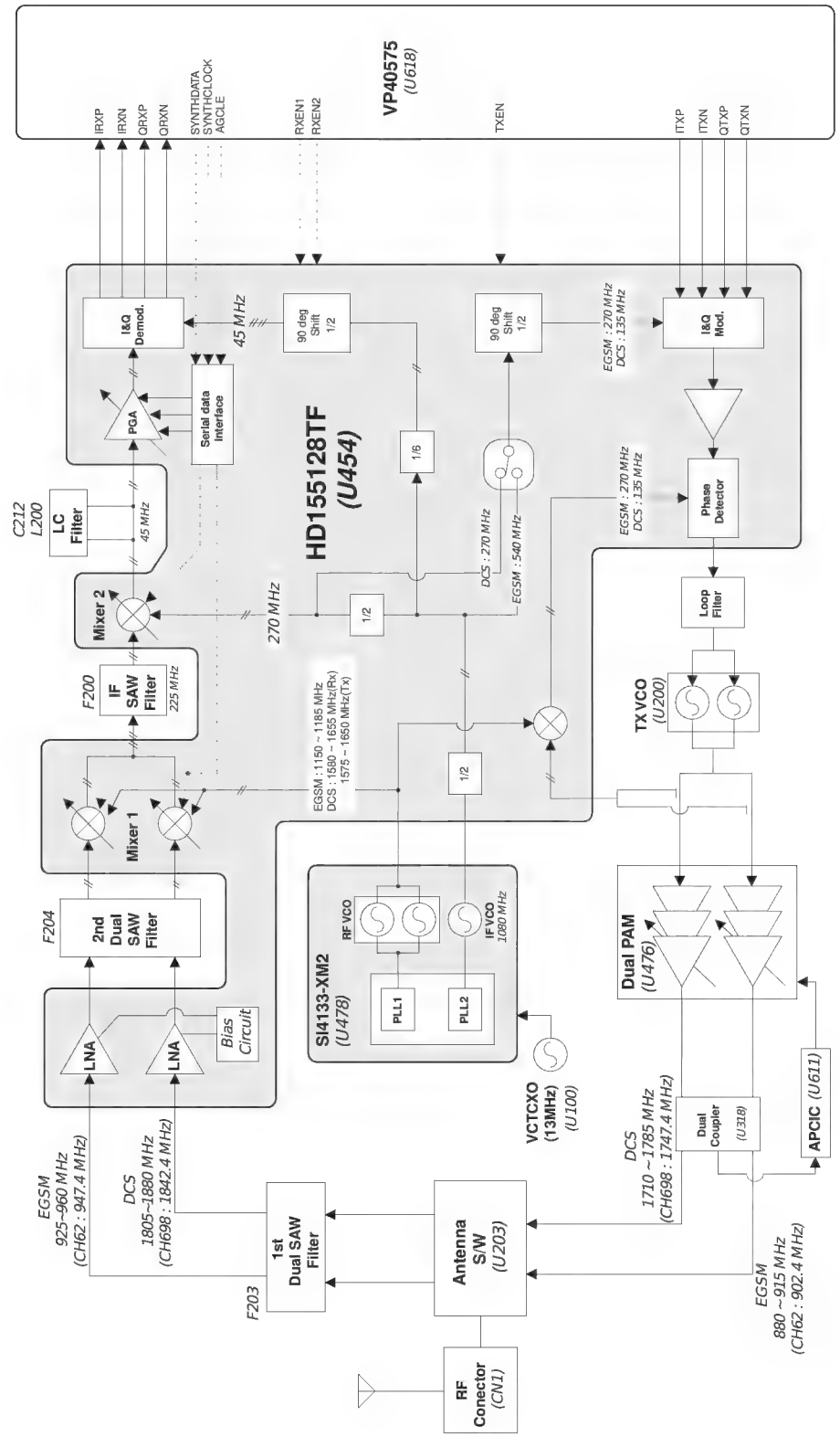
NO	SEC CODE	Reference	Part Description	Vendor Part No.
43	2203-000654	C585	“C-CERAMIC,CHIP,270pF,10%,50V,X7R,TP,1005”	C1005X7R1H271KT
44	2203-000438	C720	“C-CERAMIC,CHIP,1nF,10%,50V,X7R,TP,1005”	CL05B102KBNC
45	2203-000995	C713	“C-CERAMIC,CHIP,0.047nF,5%,50V,NP0,TP,1005”	CL05C470JBNC
46	2203-000812	C664	“C-CERAMIC,CHIP,0.033nF,5%,50V,NP0,TP,1005”	CL05C330JBNC
47	2203-000311	C657	“C-CERAMIC,CHIP,0.12nF,5%,50V,NP0,TP,1005”	CL05C121JANC
48	2203-000233	C658	“C-CERAMIC,CHIP,0.1nF,5%,50V,NP0,TP,1005”	CL05C101JBNC
49	2203-000679	C665	“C-CERAMIC,CHIP,0.027nF,5%,50V,NP0,TP,1005”	CL05C270JBNC
50	2203-000438	C270	“C-CERAMIC,CHIP,1nF,10%,50V,X7R,TP,1005”	CL05B102KBNC
51	2203-000679	C267	“C-CERAMIC,CHIP,0.027nF,5%,50V,NP0,TP,1005”	CL05C270JBNC
52	2203-000679	C269	“C-CERAMIC,CHIP,0.027nF,5%,50V,NP0,TP,1005”	CL05C270JBNC
53	2203-005061	C308	“C-CERAMIC,CHIP,100nF,+80-20%,16V,1005”	C1005Y5V1C104ZT
54	2203-005061	C418	“C-CERAMIC,CHIP,100nF,+80-20%,16V,1005”	C1005Y5V1C104ZT
55	2203-005061	C419	“C-CERAMIC,CHIP,100nF,+80-20%,16V,1005”	C1005Y5V1C104ZT
56	2203-005061	C420	“C-CERAMIC,CHIP,100nF,+80-20%,16V,1005”	C1005Y5V1C104ZT
57	2203-005061	C421	“C-CERAMIC,CHIP,100nF,+80-20%,16V,1005”	C1005Y5V1C104ZT
58	2203-005065	C411	“C-CERAMIC,CHIP,1000nF,+80-20%,10V,1608”	GRM39Y5V105Z10PT
59	2203-005065	C412	“C-CERAMIC,CHIP,1000nF,+80-20%,10V,1608”	GRM39Y5V105Z10PT
60	2203-005065	C415	“C-CERAMIC,CHIP,1000nF,+80-20%,10V,1608”	GRM39Y5V105Z10PT
61	2203-005065	C417	“C-CERAMIC,CHIP,1000nF,+80-20%,10V,1608”	GRM39Y5V105Z10PT
62	2203-005065	C422	“C-CERAMIC,CHIP,1000nF,+80-20%,10V,1608”	GRM39Y5V105Z10PT
63	2203-005065	C490	“C-CERAMIC,CHIP,1000nF,+80-20%,10V,1608”	GRM39Y5V105Z10PT
64	2203-005444	C404	“C-CERAMIC,CHIP,0.003nF,0.1pF,50V,NP0,1005”	C1005C0G1H030BT
65	2703-001723	L408	“INDUCTOR-SMD,33nH,5%,1.0x0.5x0.5mm”	HK1005-33NJ-T
66	2703-001723	L409	“INDUCTOR-SMD,33nH,5%,1.0x0.5x0.5mm”	HK1005-33NJ-T
67	3002-001098	BUZ300	“BUZZER-MAGNETIC,94dB,3V,150mA,2700Hz”	BRT-03S
68	N.C	R730	N.C POINT	
69	N.C	C715	N.C POINT	

4. Block Diagrams

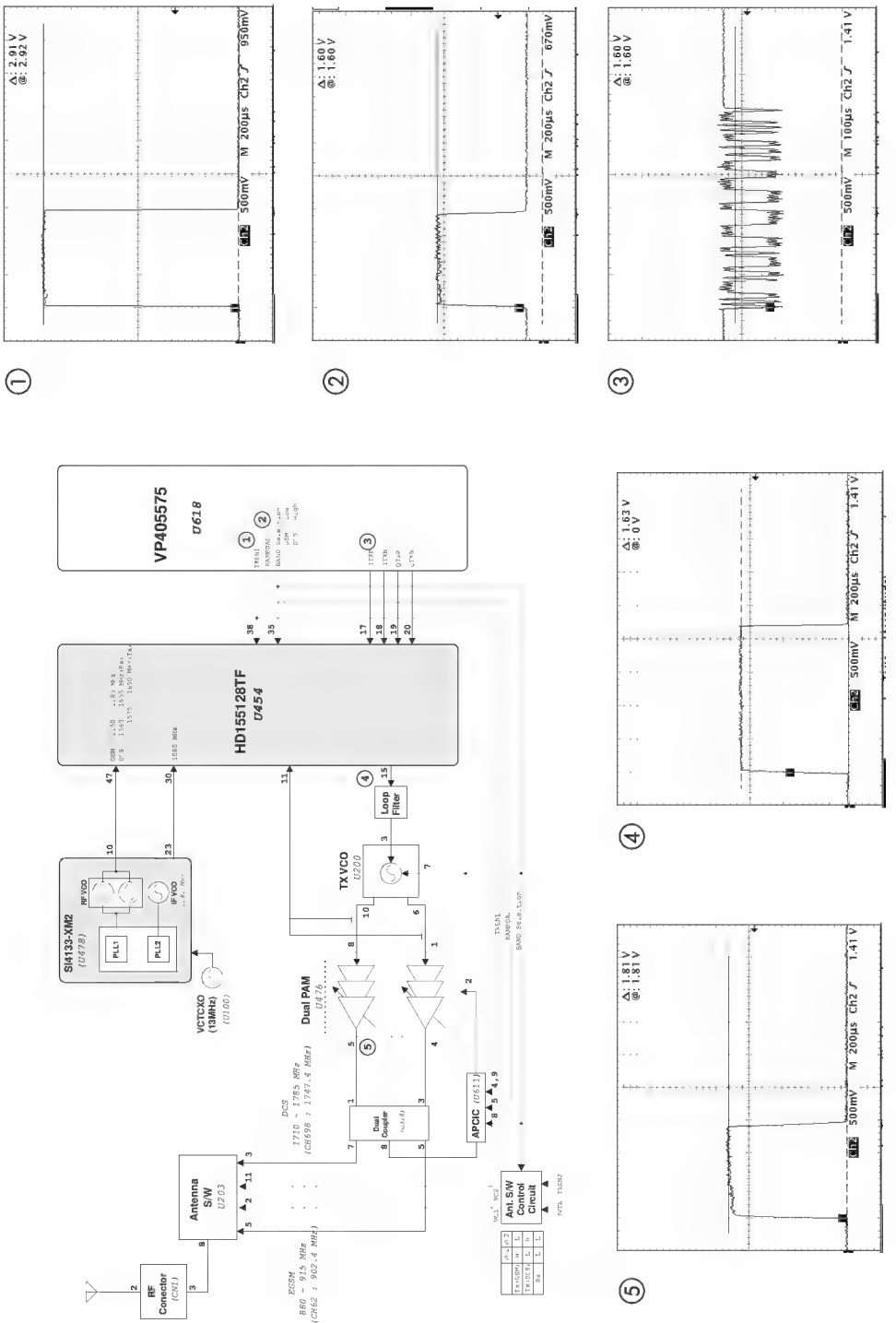
4-1 Main Baseband



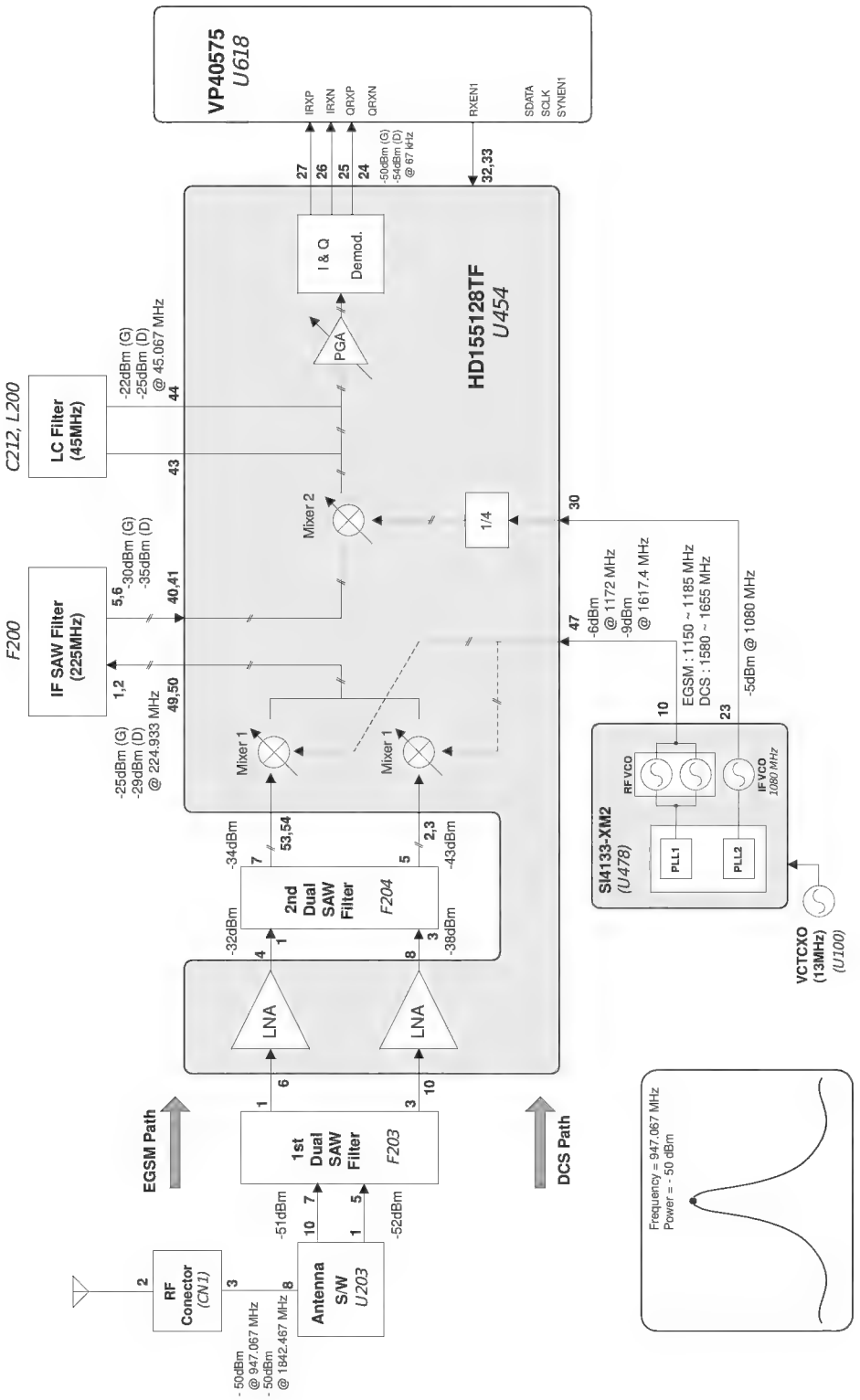
4-2 Main RF


VP40575
(U618)
IRXP
IRXN
QRXP
QRXN
SYNTHDATA
SYNTHCLOCK
AGCLE
RXEN1
RXEN2
TXEN
ITXP
ITXN
QTXP
QTXN
HD155128TF
(U454)
I&Q Demod.
I&Q Mod.
PGA
Serial data Interface
45 MHz
90 deg Shift 1/2
1/6
1/2
EGSM : 270 MHz
DCS : 135 MHz
DCS : 270 MHz
EGSM : 540 MHz
Phase Detector
Loop Filter
TX VCO
(U200)
C212
L200
LC Filter
Mixer 2
270 MHz
F200
IF SAW Filter
225 MHz
EGSM : 1150 ~ 1185 MHz
DCS : 1580 ~ 1655 MHz(Rx)
1575 ~ 1650 MHz(Tx)
Mixer 1
F204
2nd Dual SAW Filter
LNA
LNA
Bias Circuit
SI4133-XM2
(U478)
RF VCO
IF VCO
1080 MHz
PLL1
PLL2
Dual PAM
(U476)
VCTCXO
(13MHz)
(U100)
EGSM
925~960 MHz
(CH62 : 947.4 MHz)
DCS
1805~1880 MHz
(CH698 : 1842.4 MHz)
1st Dual SAW Filter
F203
Antenna S/W
(U203)
RF Conector
(CN1)
DCS
1710 ~1785 MHz
(CH698 : 1747.4 MHz)
Dual Coupler
(U318)
APCIC (U611)
EGSM
880 ~915 MHz
(CH62 : 902.4 MHz)

4-2-1 RF Transmit Part

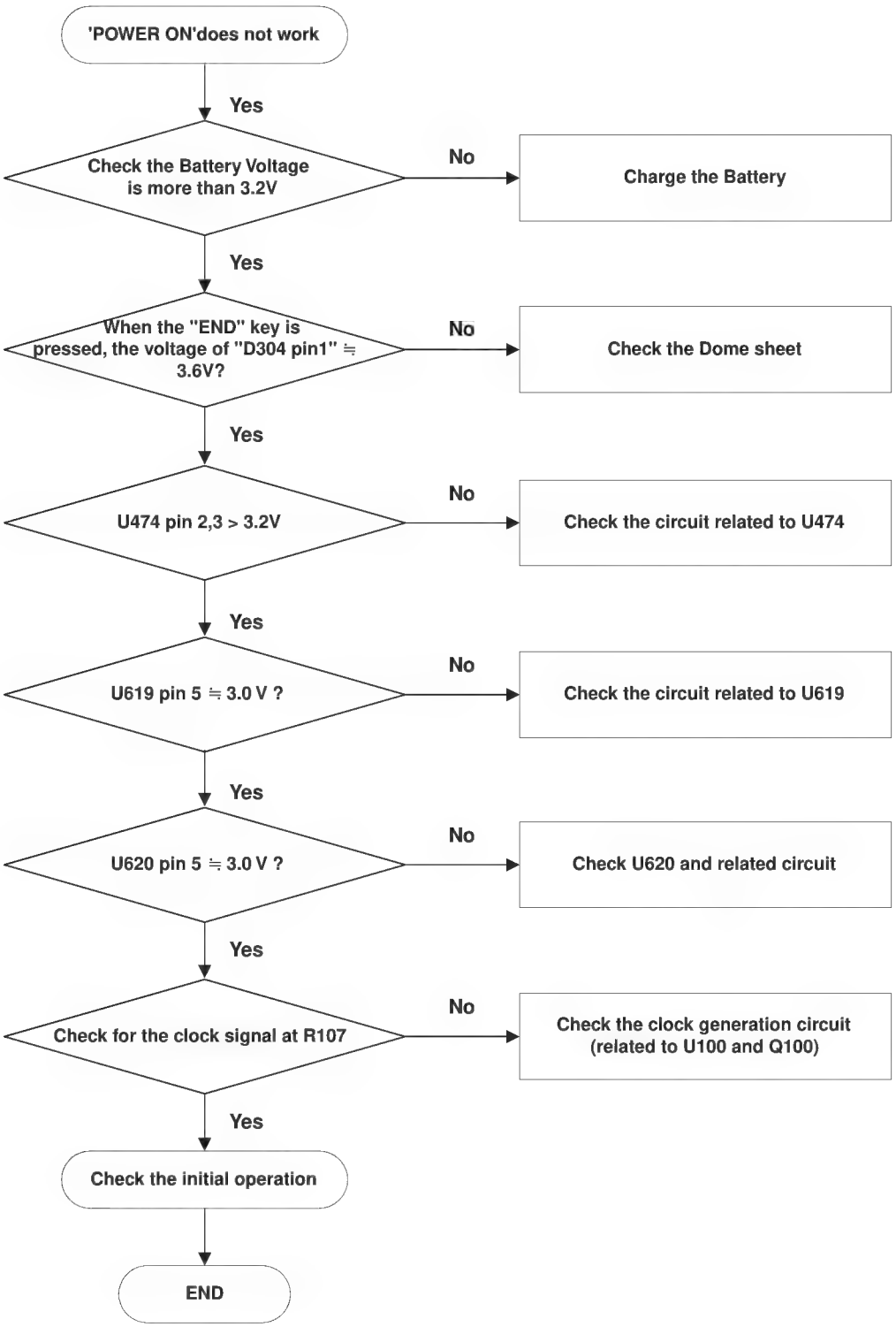


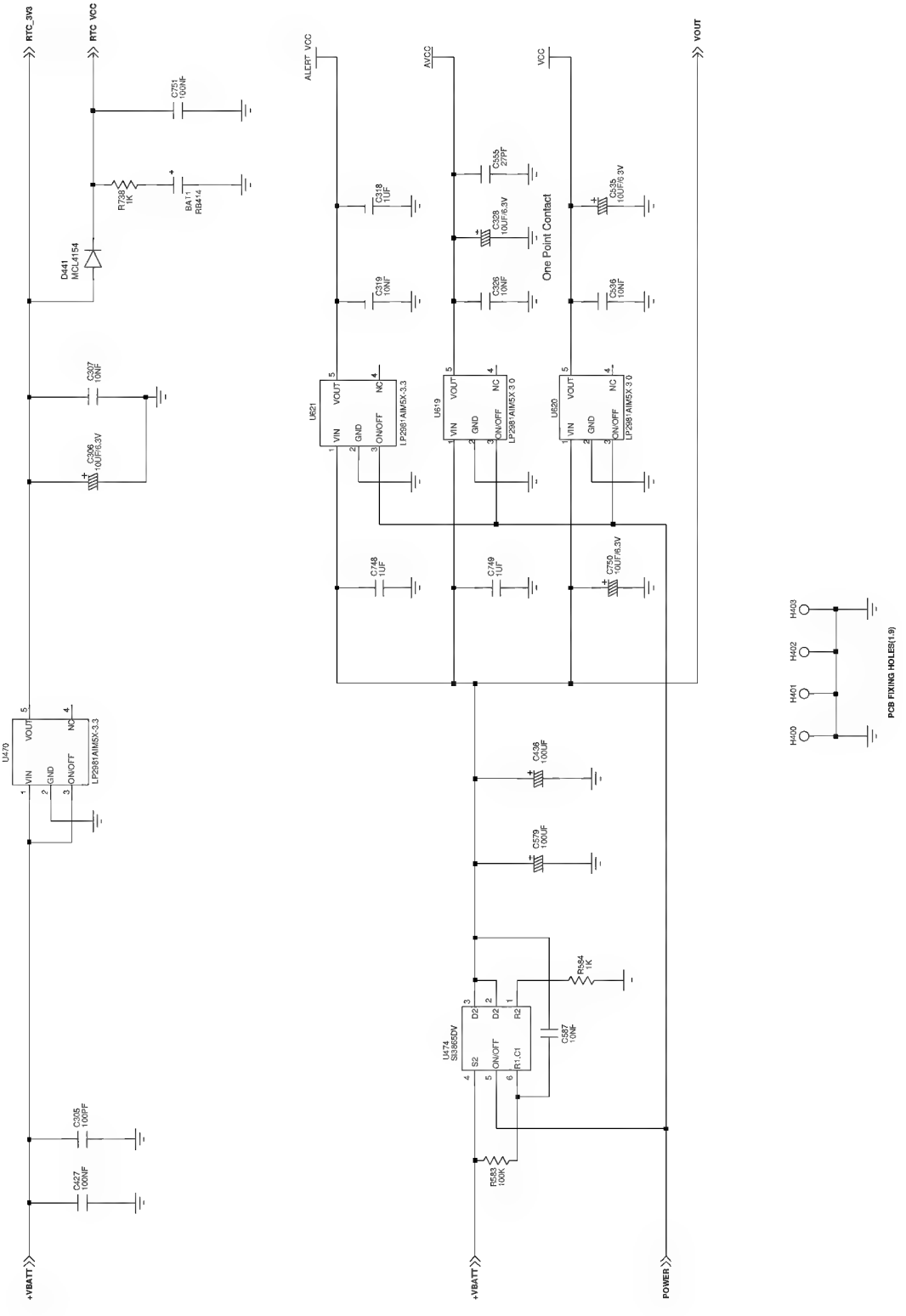
4-2-2 RF Receive Part



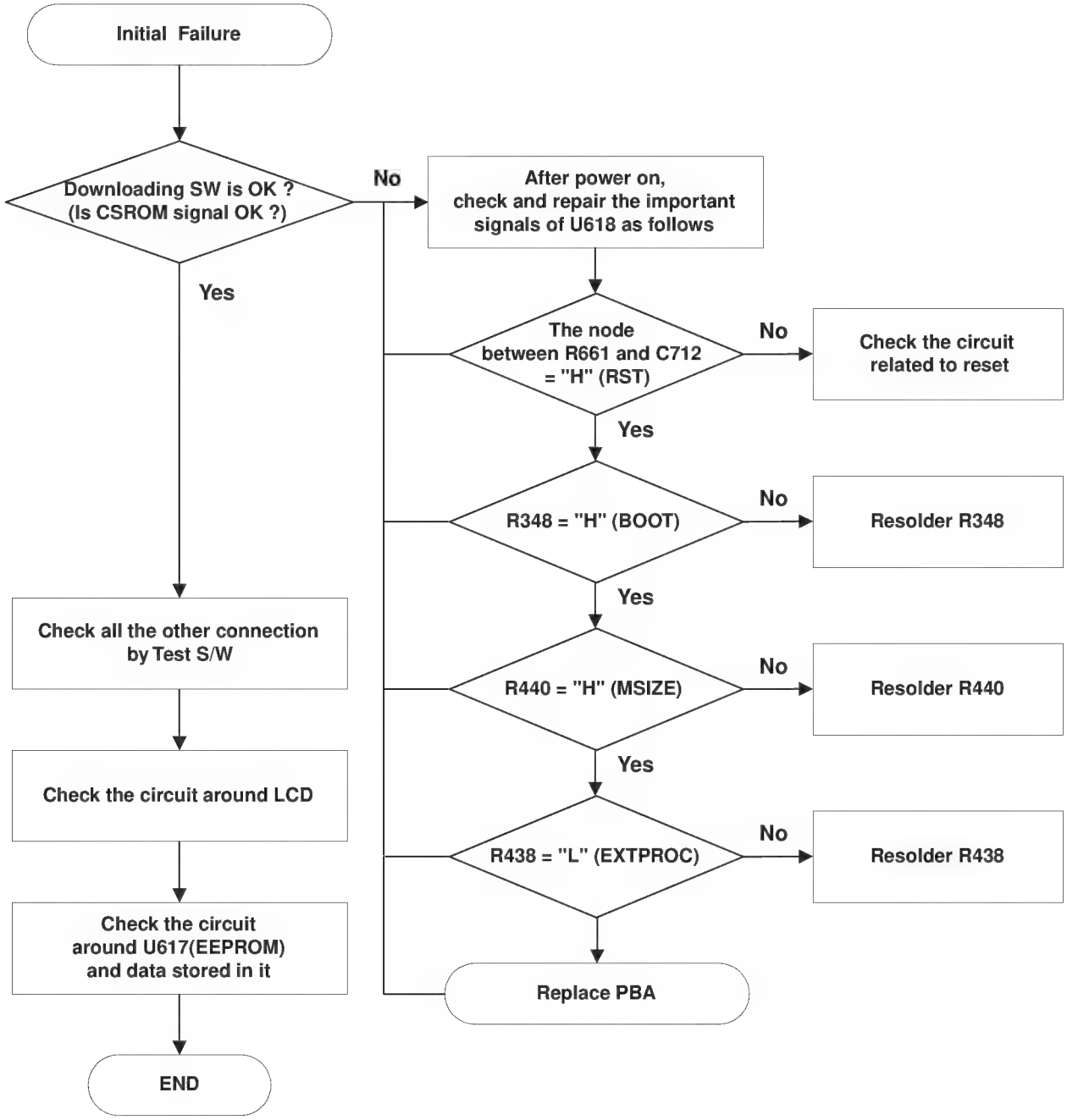
5. Flow Chart of Troubleshooting and Circuit Diagrams

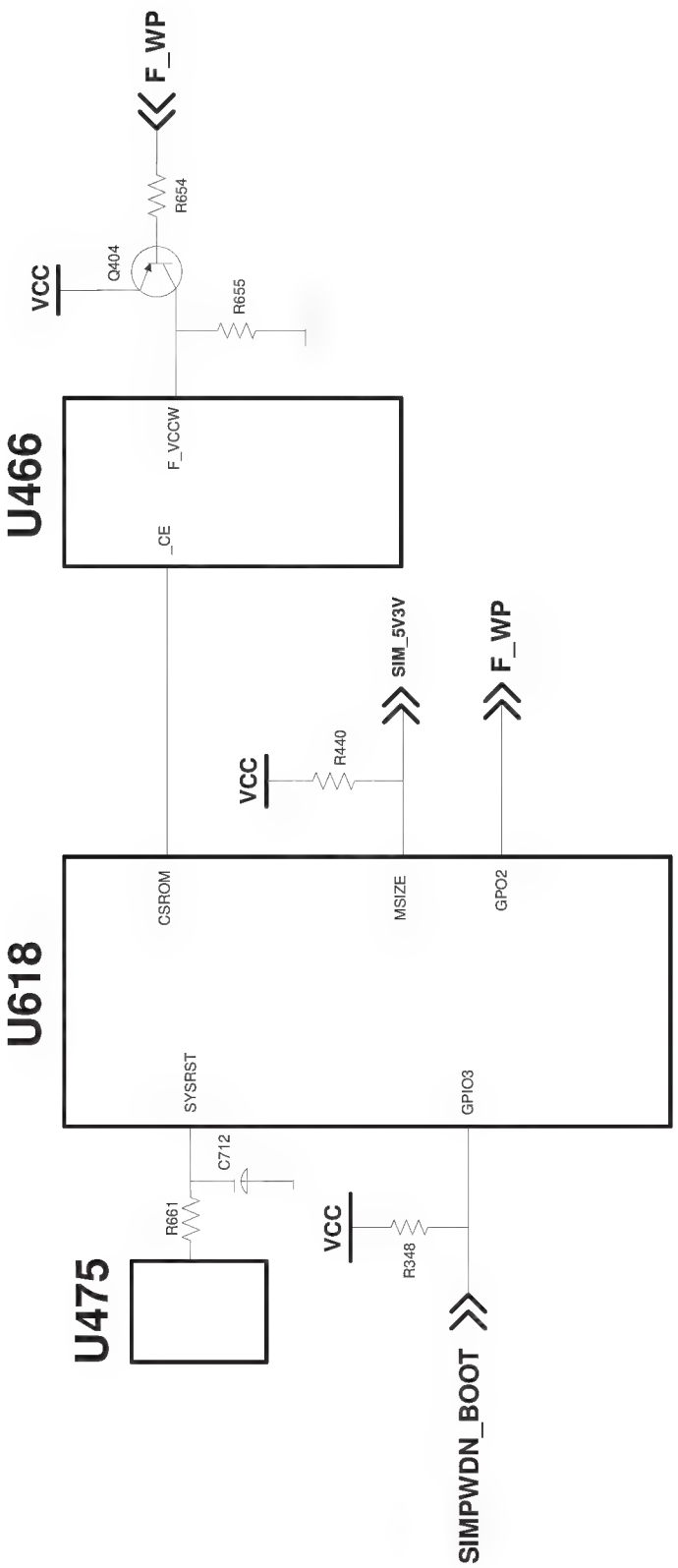
5-1 Power ON



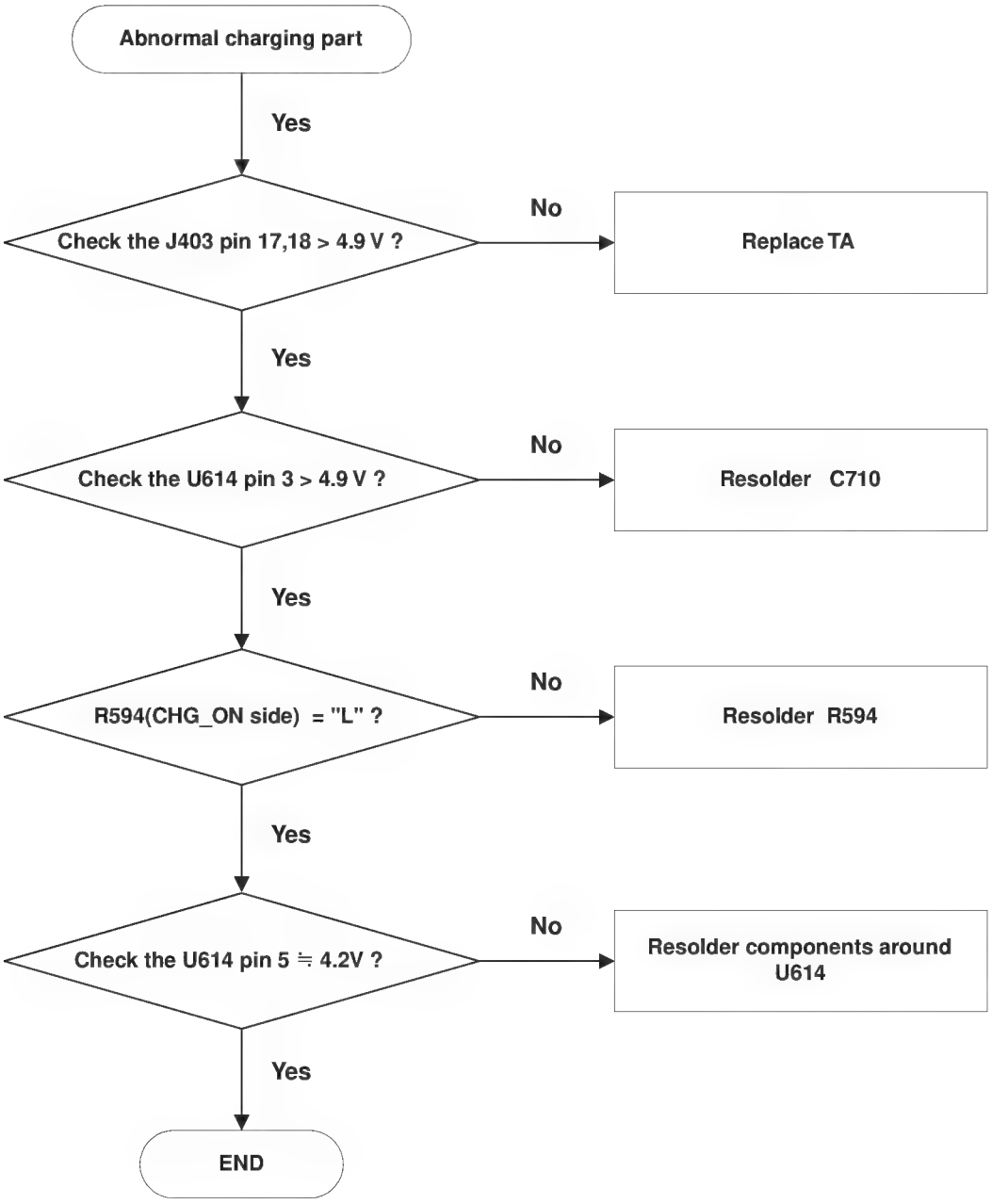

RTC_3V3
RTC VCC
ALERT VCC
AVCC
VCC
VOUT
One Point Contact
+VBATT
+VBATT
POWER
PCB FIXING HOLES(1.9)
H400
H401
H402
H403
U470
LP2981AIM5X-3.3
U521
LP2981AIM5X-3.3
U519
LP2981AIM5X-3.0
U520
LP2981AIM5X-3.0
U474
S3B85BDV
D441
MCL4154
BA11
RB414
R738
1K
R584
1K
R583
100K
C751
100NF
C307
10NF
C306
10UF/6.3V
C305
100PF
C427
100NF
C318
1UF
C319
10NF
C555
27PF
C328
10UF/6.3V
C326
10NF
C535
10UF/6.3V
C536
10NF
C748
1UF
C749
1UF
C752
10UF/6.3V
C436
100UF
C579
100UF
C587
10NF

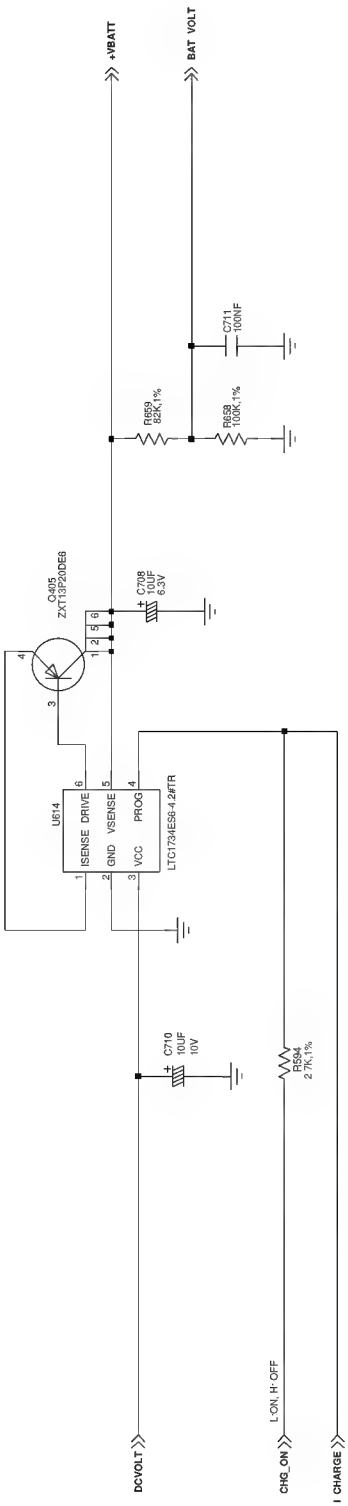
5-2 Initial


Initial Failure
Downloading SW is OK ?
(Is CSROM signal OK ?)
No
After power on,
check and repair the important
signals of U618 as follows
Yes
The node
between R661 and C712
= "H" (RST)
No
Check the circuit
related to reset
Yes
R348 = "H" (BOOT)
No
Resolder R348
Yes
R440 = "H" (MSIZE)
No
Resolder R440
Yes
R438 = "L" (EXTPROC)
No
Resolder R438
Replace PBA
Check all the other connection
by Test S/W
Check the circuit around LCD
Check the circuit
around U617(EEPROM)
and data stored in it
END

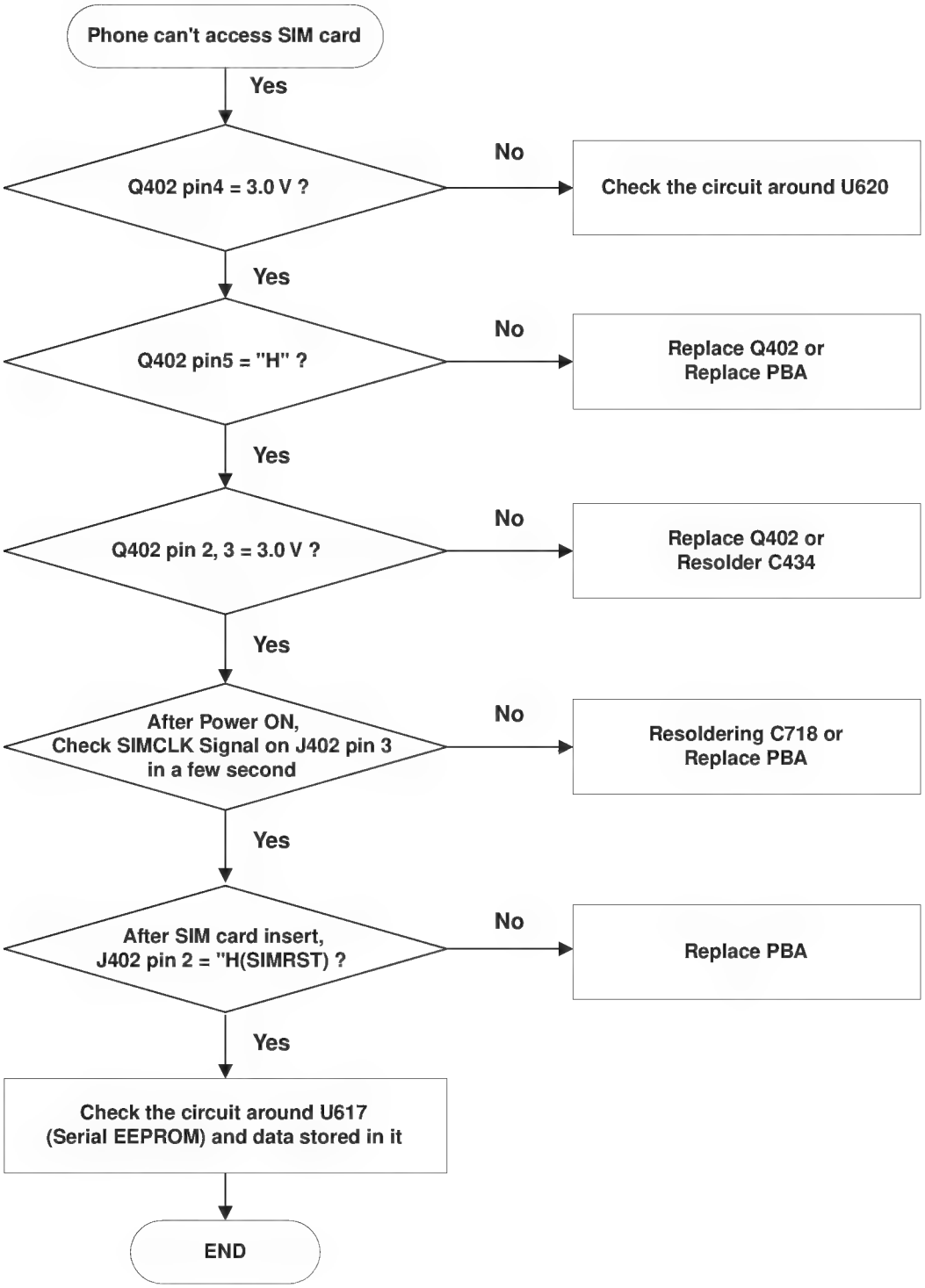

F_WP
R654
Q404
VCC
R655
U466
F_VCCW
_CE
SIM_5V3V
F_WP
VCC
R440
U618
CSROM
MSIZE
GPO2
SYSRST
GPIO3
C712
R661
VCC
R348
U475
SIMPWDN_BOOT

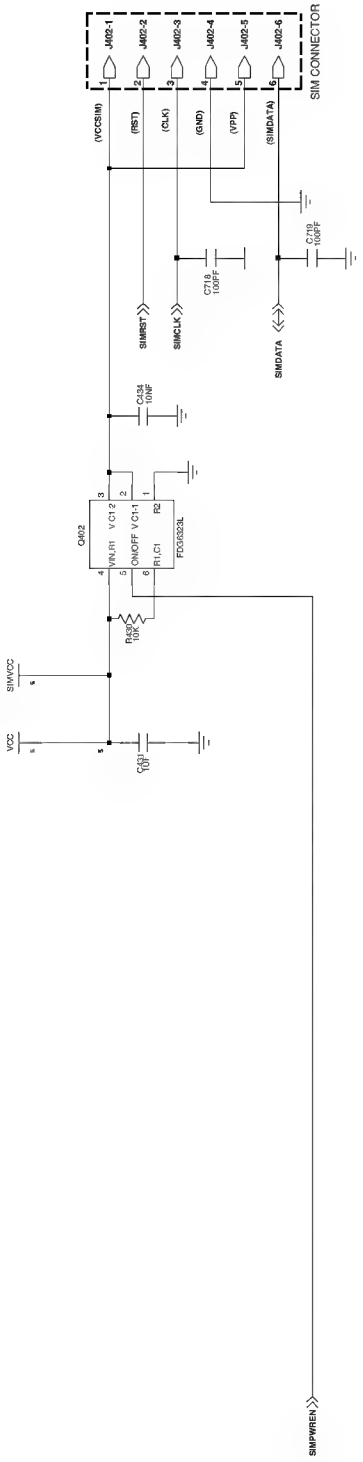
5-3 Charging Part



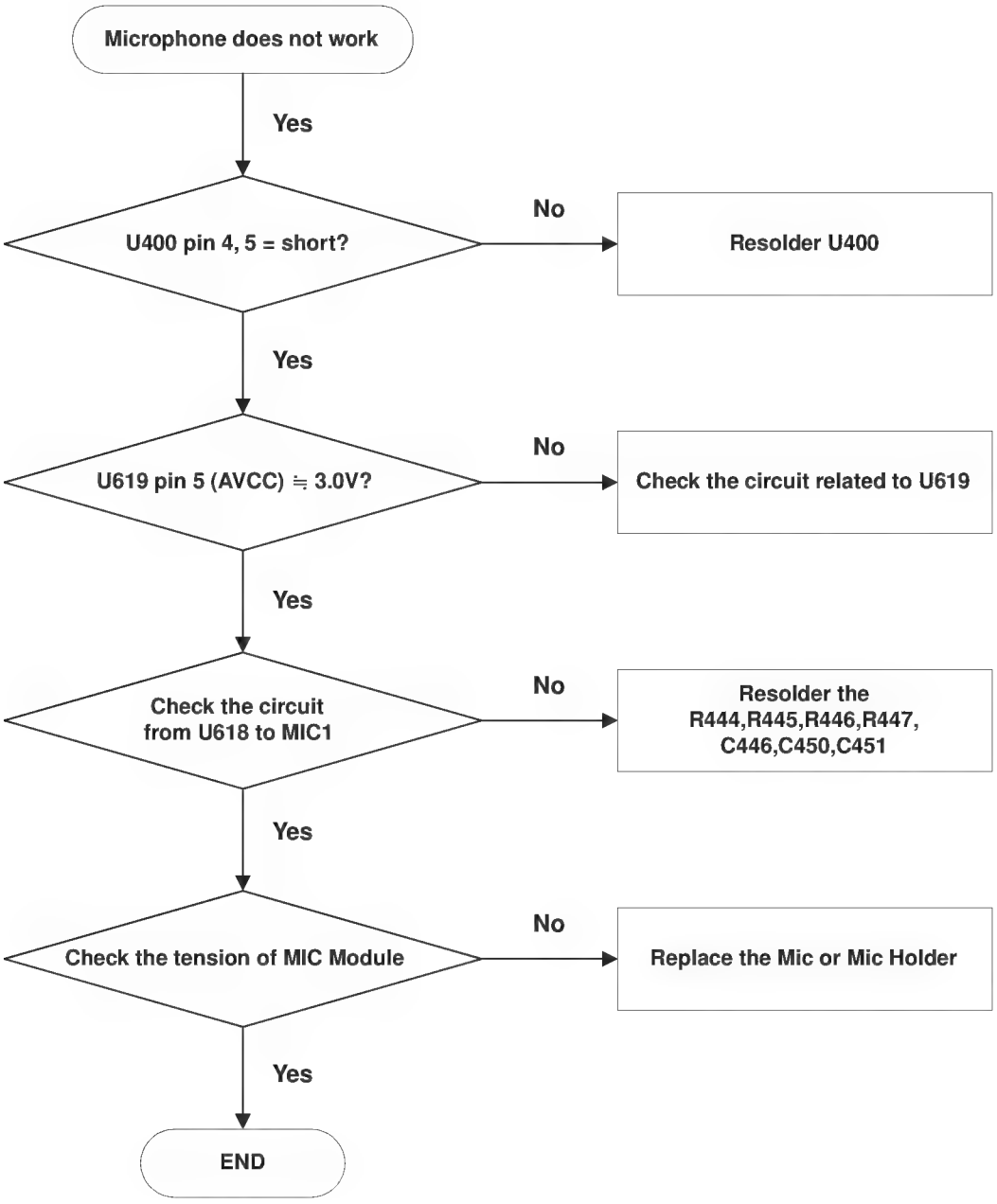

+VBATT
BAT VOLT
C711
100NF
R659
825K,1%
R658
100K,1%
Q405
ZXT13P20DE6
C708
0.01F
6.3V
U614
ISENSE DRIVE
GND VSENSE
VCC PROG
LTC1734ES6-4.2#TR
C710
10UF
10V
R594
2.7K,1%
L:ON, H:OFF
DCVOLT
CHG_ON
I CHARGE

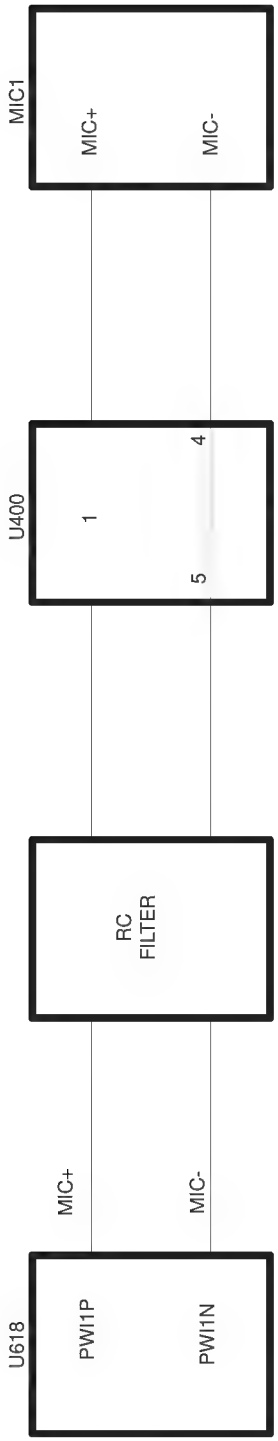
5-4 Sim Part


Phone can't access SIM card
Yes
Q402 pin4 = 3.0 V ?
No
Check the circuit around U620
Yes
Q402 pin5 = "H" ?
No
Replace Q402 or
Replace PBA
Yes
Q402 pin 2, 3 = 3.0 V ?
No
Replace Q402 or
Resolder C434
Yes
After Power ON,
Check SIMCLK Signal on J402 pin 3
in a few second
No
Resoldering C718 or
Replace PBA
Yes
After SIM card insert,
J402 pin 2 = "H(SIMRST) ?
No
Replace PBA
Yes
Check the circuit around U617
(Serial EEPROM) and data stored in it
END

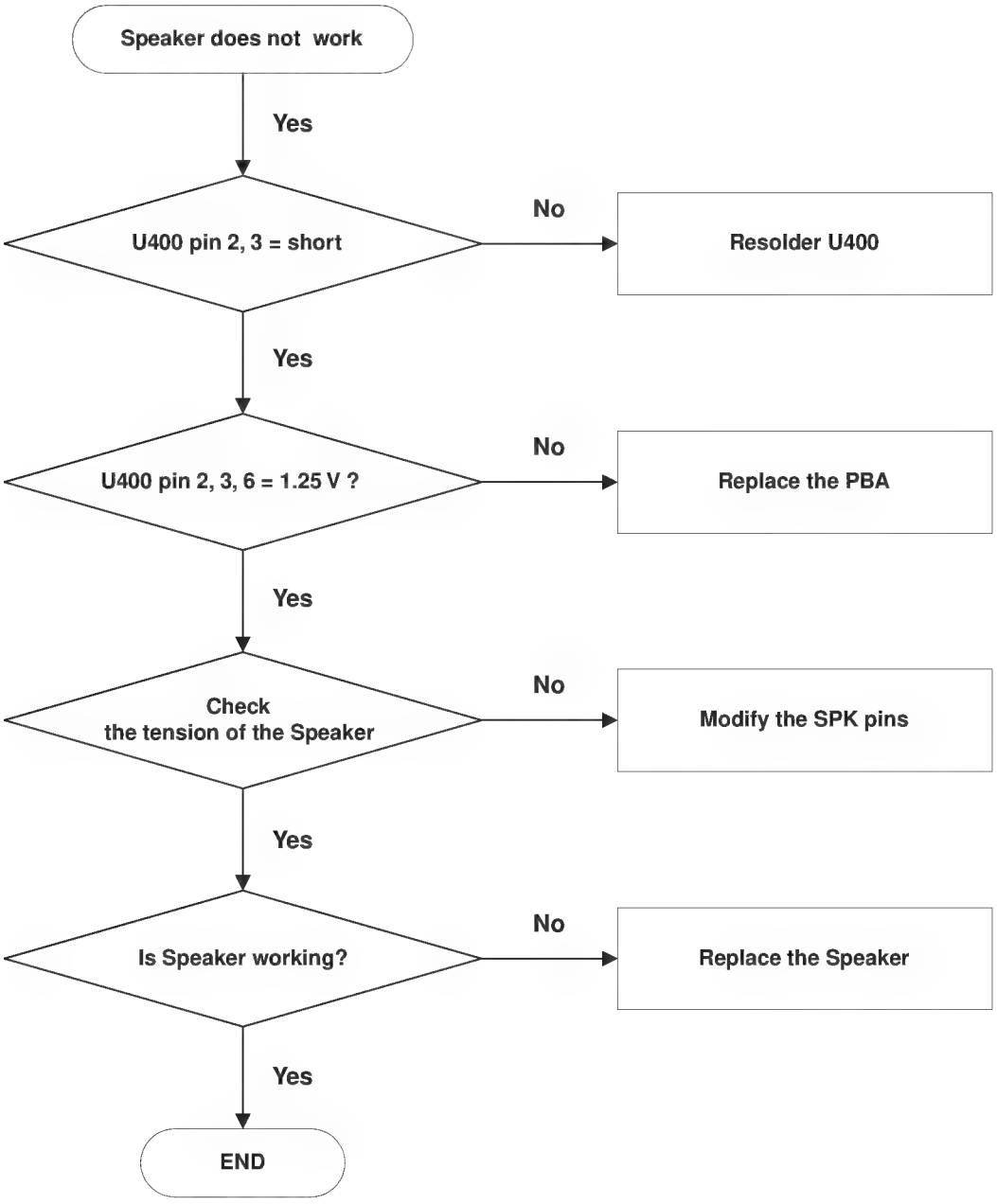

SIM CONNECTOR
J402-1
J402-2
J402-3
J402-4
J402-5
J402-6
(VCCSIM)
(RST)
(CLK)
(GND)
(VPP)
(SIMDATA)
C719
100PF
C718
100PF
SIMRST
SIMCLK
SIMDATA
C434
10NF
Q402
VIN,R1
V C1-2
ON/OFF
V C1-1
R1,C1
R2
FDG6323L
R801
10K
SIMVCC
VCC
C433
10F
SIMPWREN

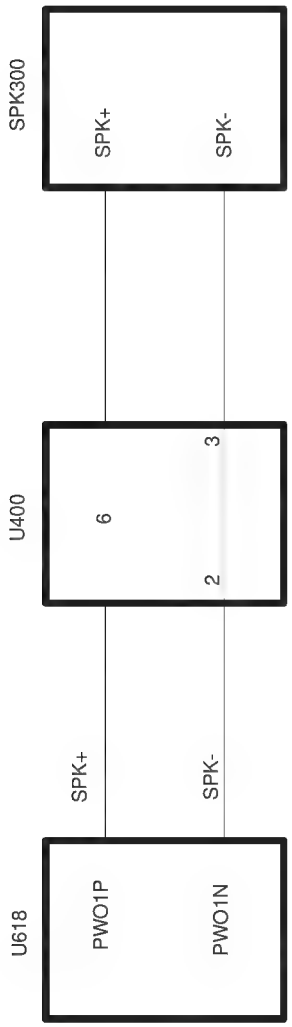
5-5 Microphone Part



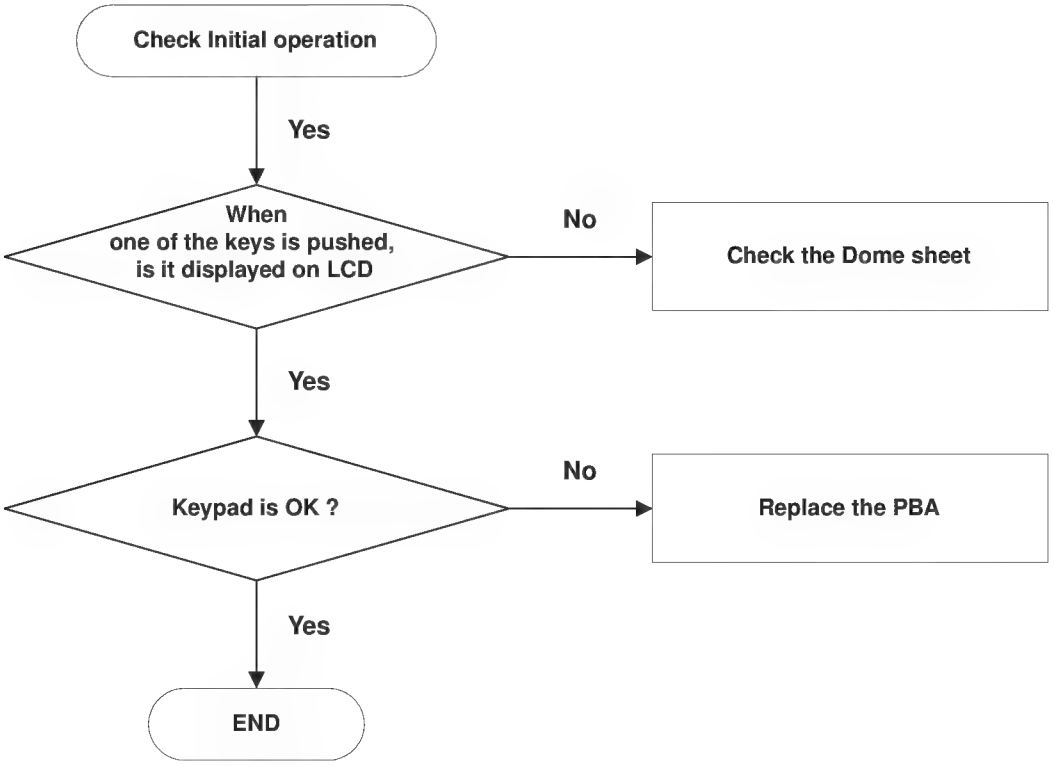

MIC1
MIC+
MIC-
U400
1
4
5
RC
FILTER
MIC+
MIC-
U618
PWI1P
PWI1N

5-6 Speaker Part

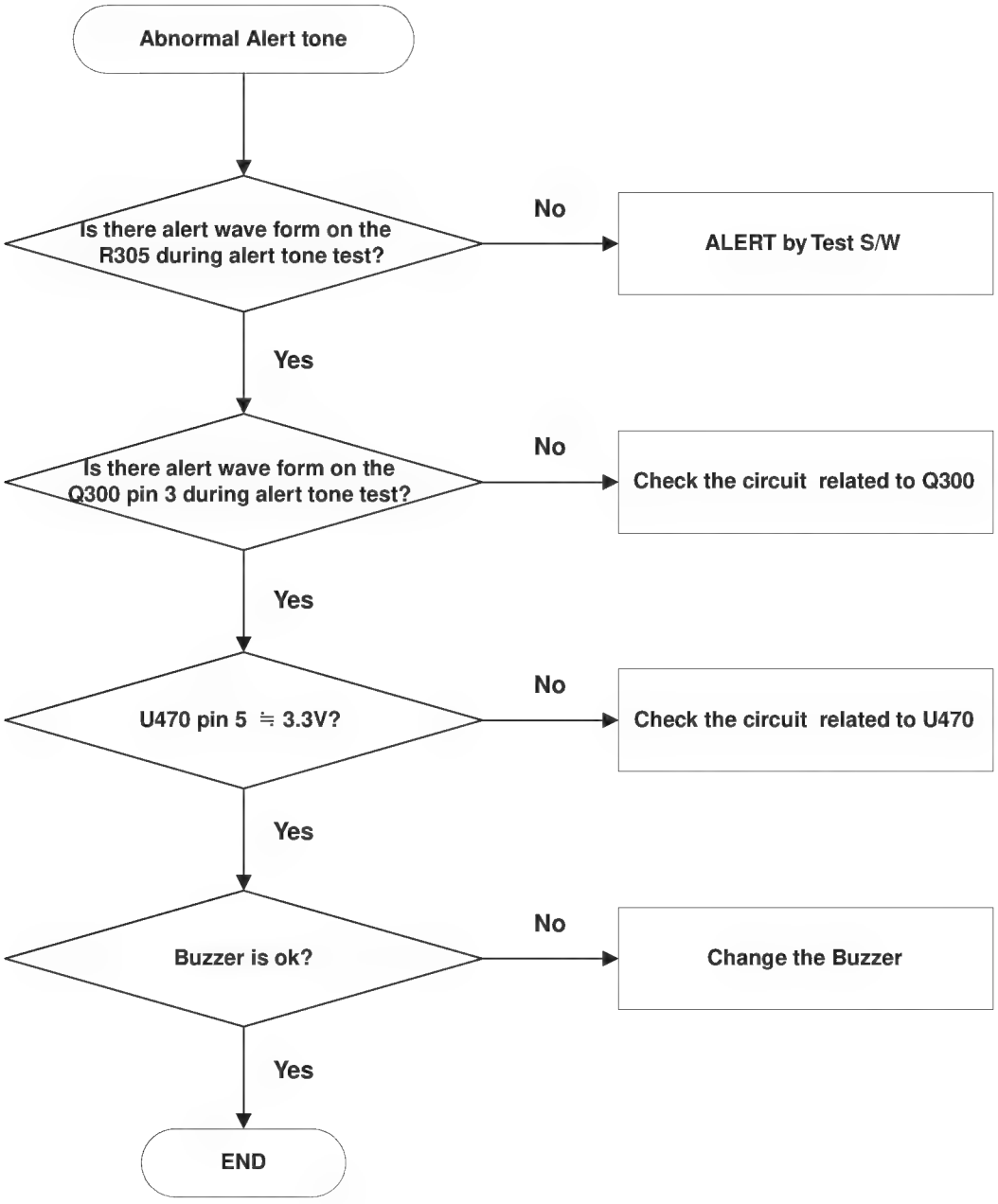


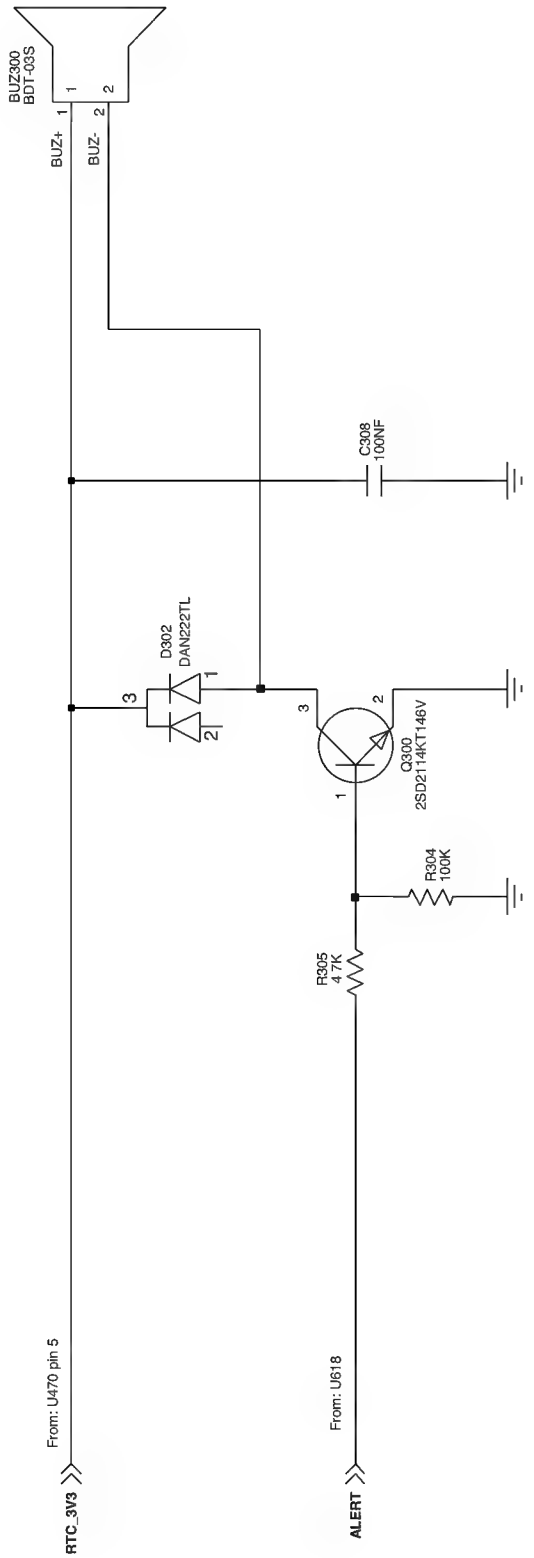

SPK300
SPK+
SPK-
U400
6
3
2
SPK+
SPK-
U618
PWO1P
PWO1N

5-7 Key Data Input

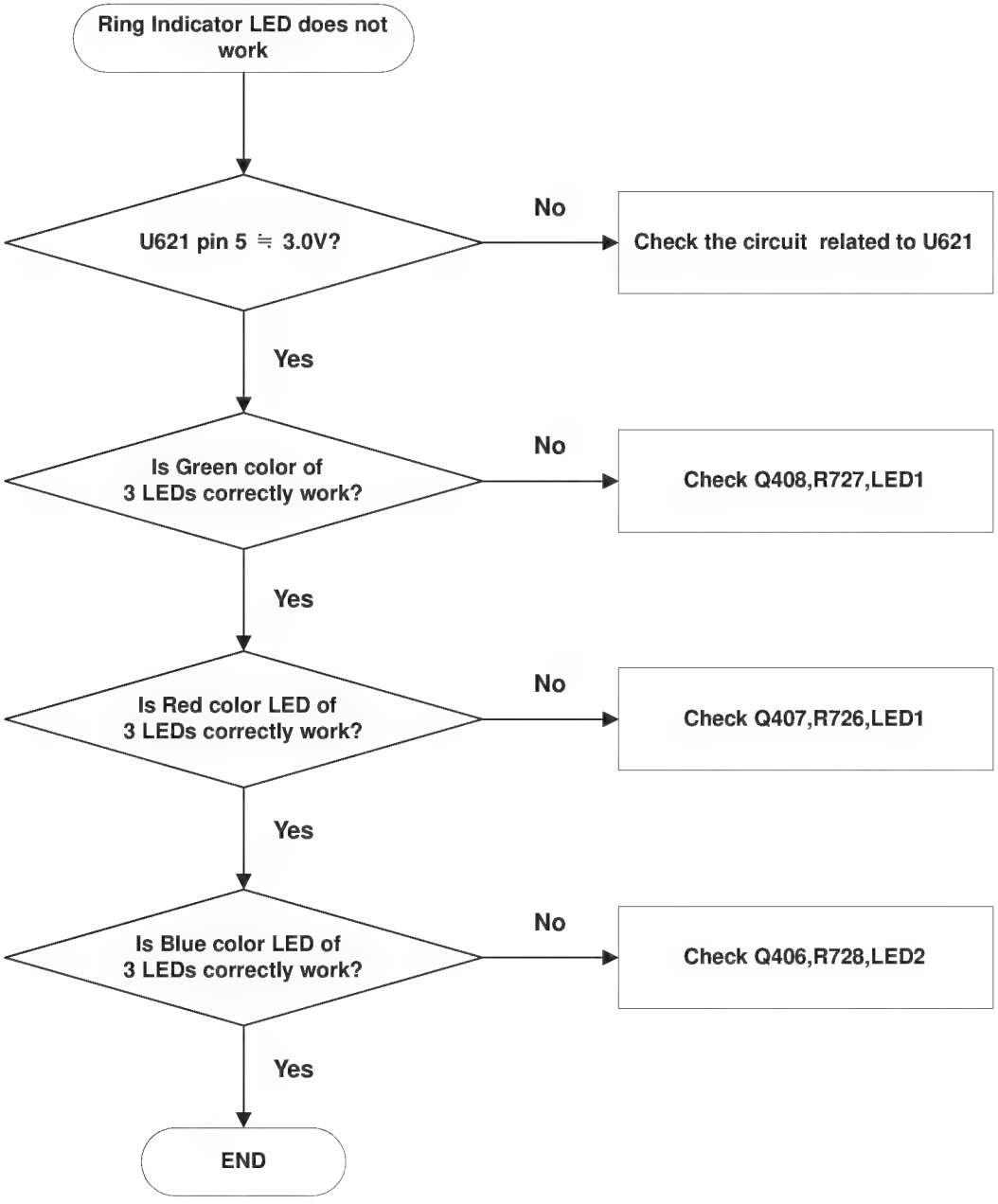


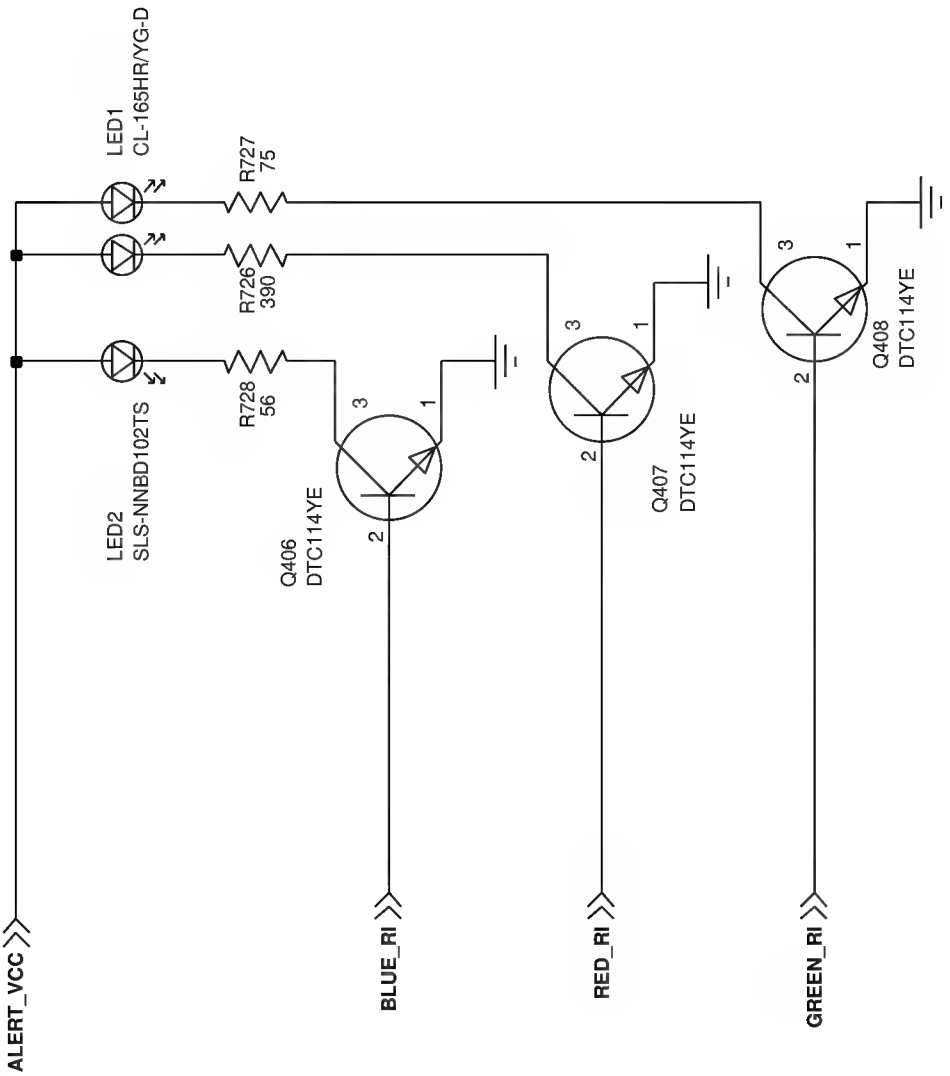
5-8 Alert Tone



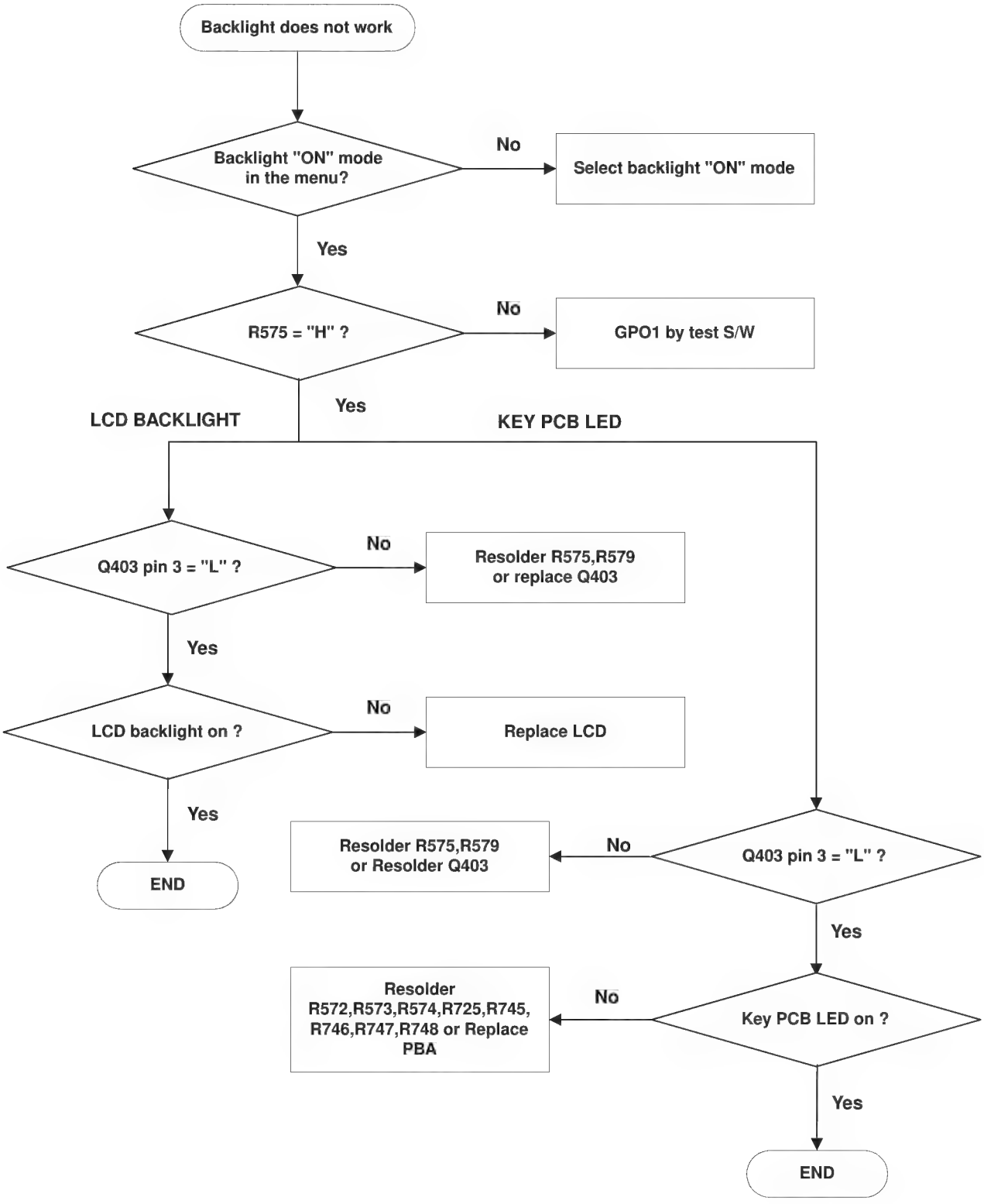

BUZ300
BDT-03S
1
2
BUZ+
BUZ-
C308
100NF
D302
DAN222TL
3
1
2
Q300
2SD2114KT146V
R304
100K
R305
4.7K
From: U470 pin 5
From: U618
RTC_3V3
ALERT

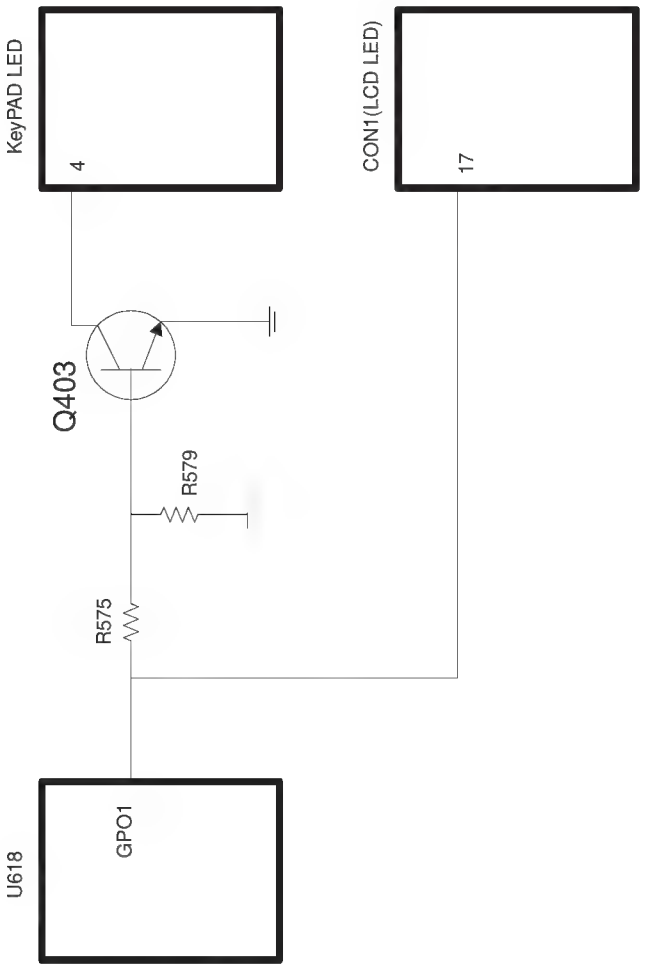
5-9 Ring Indicator



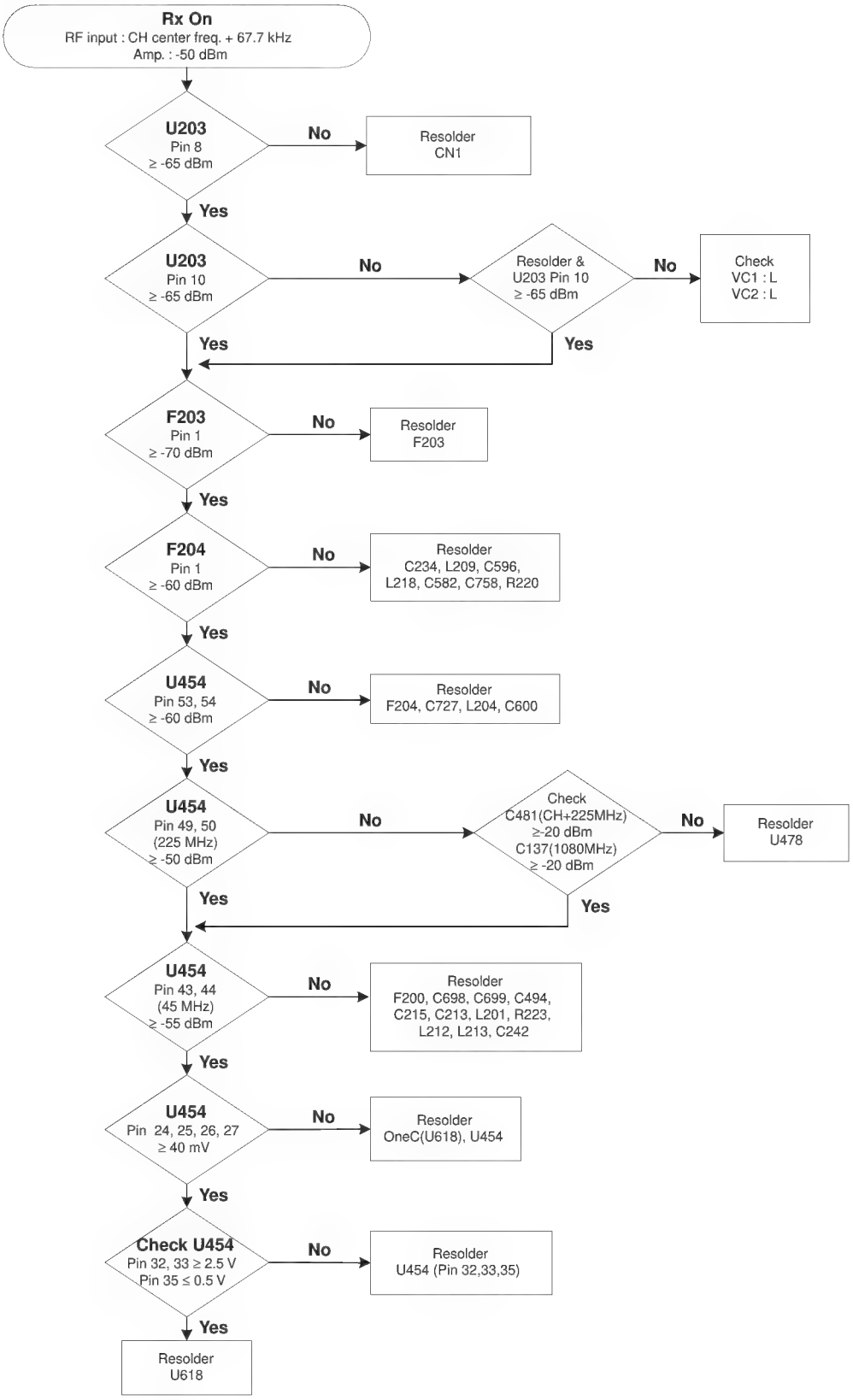

LED1
CL-165HR/YG-D
R727
75
R726
390
R728
56
LED2
SLS-NNBD102TS
Q406
DTC114YE
Q407
DTC114YE
Q408
DTC114YE
ALERT_VCC
BLUE_RI
RED_RI
GREEN_RI

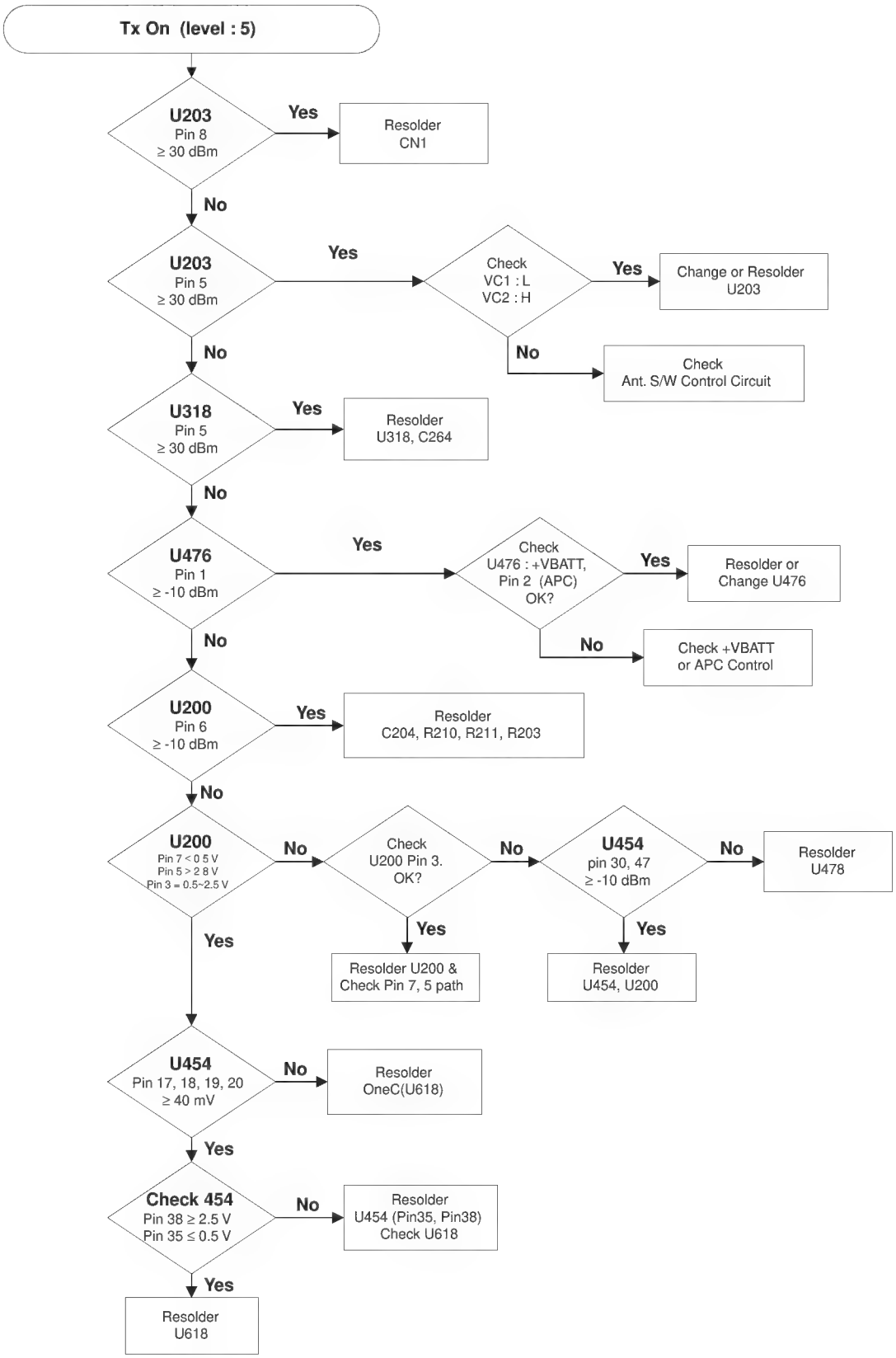
5-10 Back Light



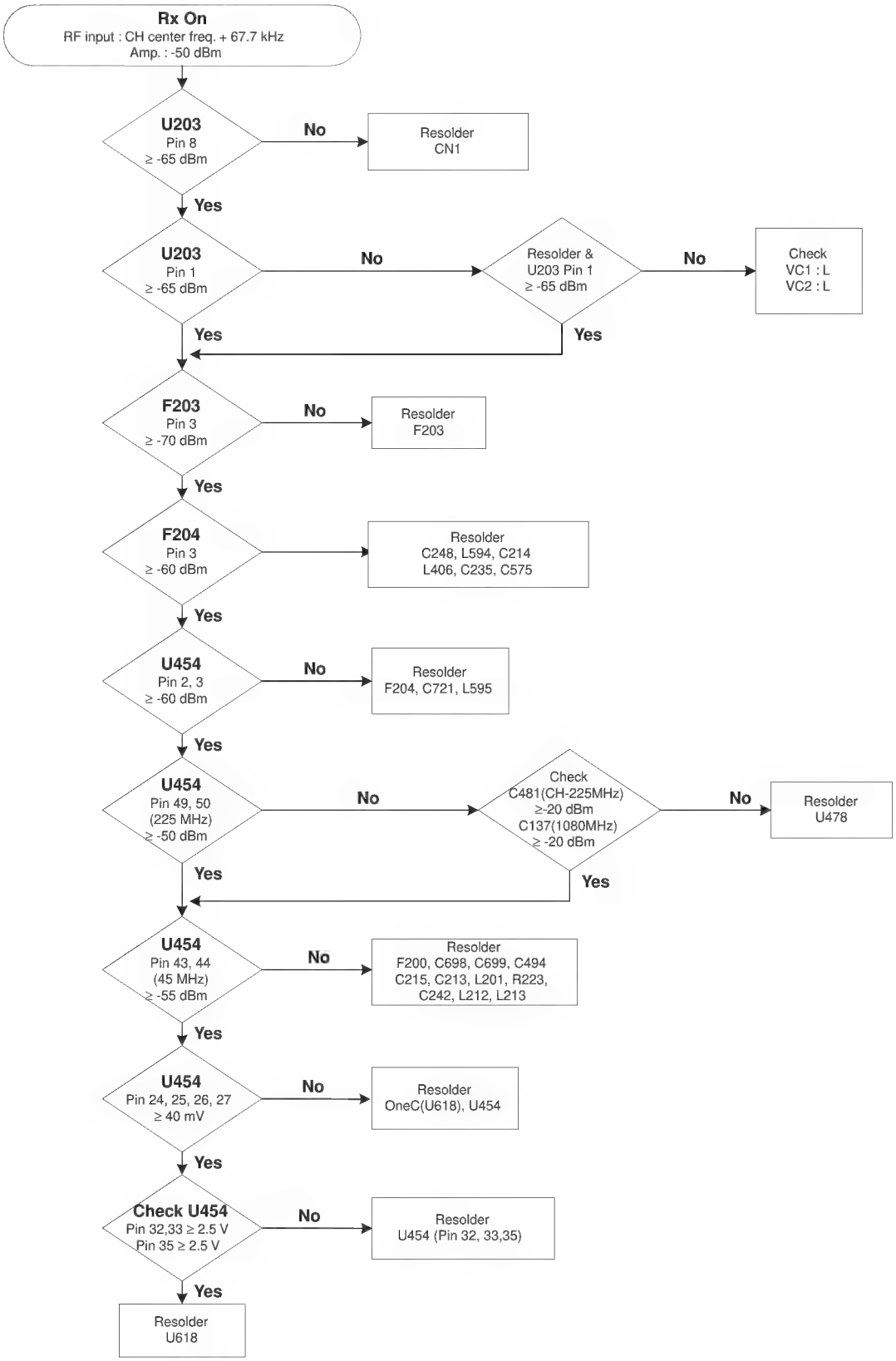

KeyPAD LED
4
CON1(LCD LED)
17
Q403
R579
R575
U618
GPO1

5-11 GSM Receiver

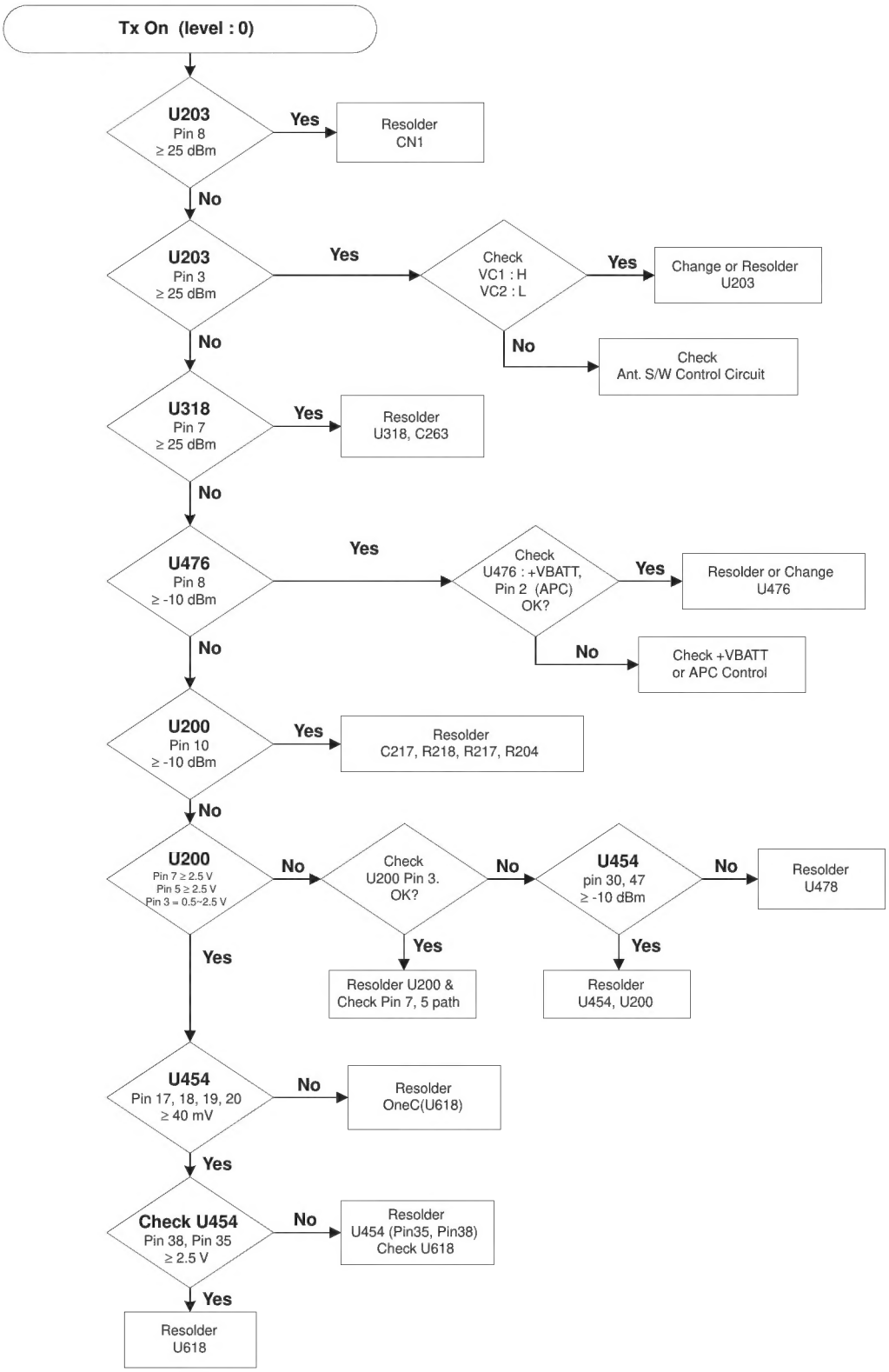


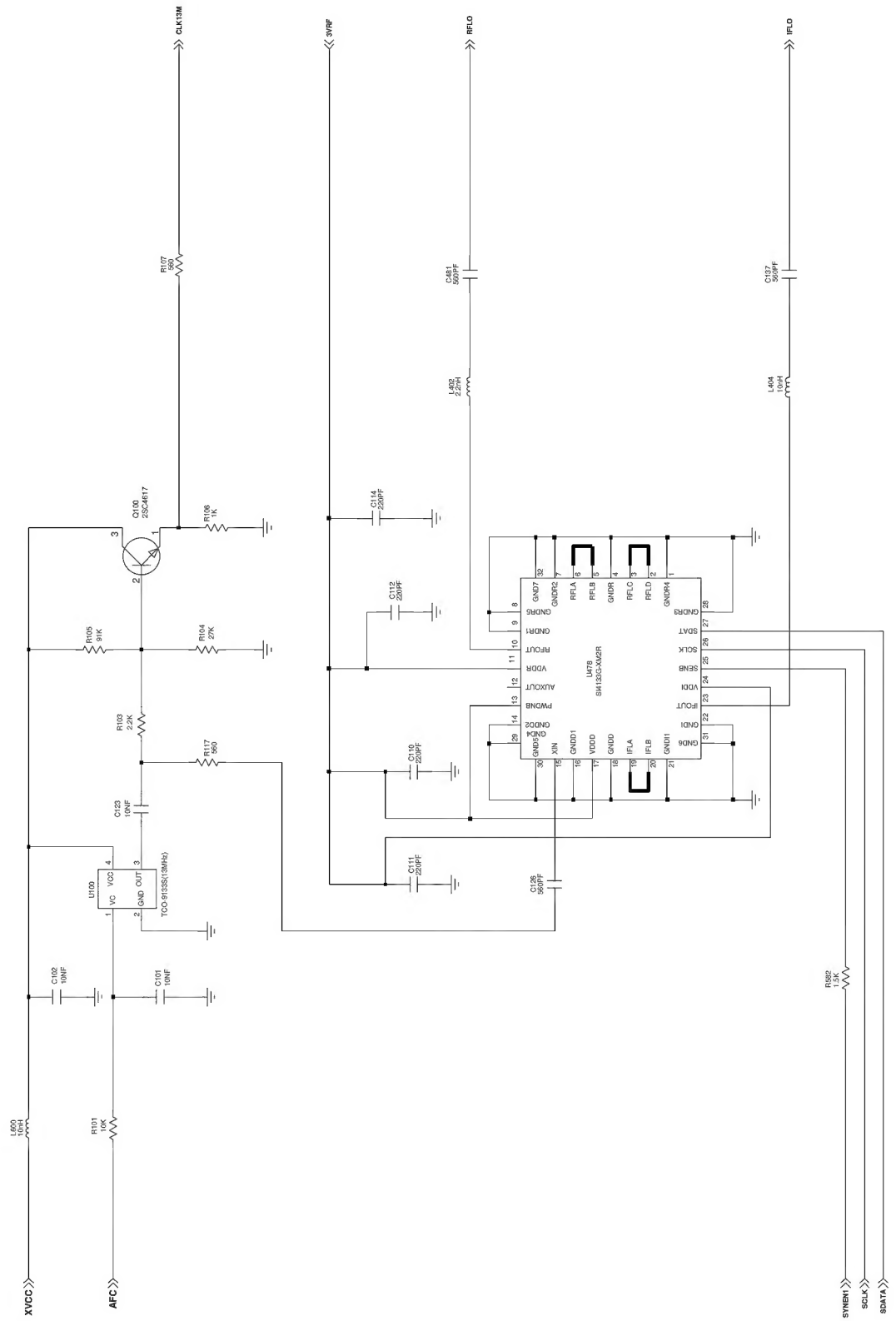

Tx On (level : 5)
U203
Pin 8
≥ 30 dBm
Yes
Resolder
CN1
No
U203
Pin 5
≥ 30 dBm
Yes
Check
VC1 : L
VC2 : H
Yes
Change or Resolder
U203
No
Check
Ant. S/W Control Circuit
No
U318
Pin 5
≥ 30 dBm
Yes
Resolder
U318, C264
No
U476
Pin 1
≥ -10 dBm
Yes
Check
U476 : +VBATT,
Pin 2 (APC)
OK?
Yes
Resolder or
Change U476
No
Check +VBATT
or APC Control
No
U200
Pin 6
≥ -10 dBm
Yes
Resolder
C204, R210, R211, R203
No
U200
Pin 7 < 0.5 V
Pin 5 > 2.8 V
Pin 3 = 0.5~2.5 V
No
Check
U200 Pin 3.
OK?
No
U454
pin 30, 47
≥ -10 dBm
No
Resolder
U478
Yes
Yes
Resolder U200 &
Check Pin 7, 5 path
Yes
Resolder
U454, U200
Yes
U454
Pin 17, 18, 19, 20
≥ 40 mV
No
Resolder
OneC(U618)
Yes
Check 454
Pin 38 ≥ 2.5 V
Pin 35 ≤ 0.5 V
No
Resolder
U454 (Pin35, Pin38)
Check U618
Yes
Resolder
U618

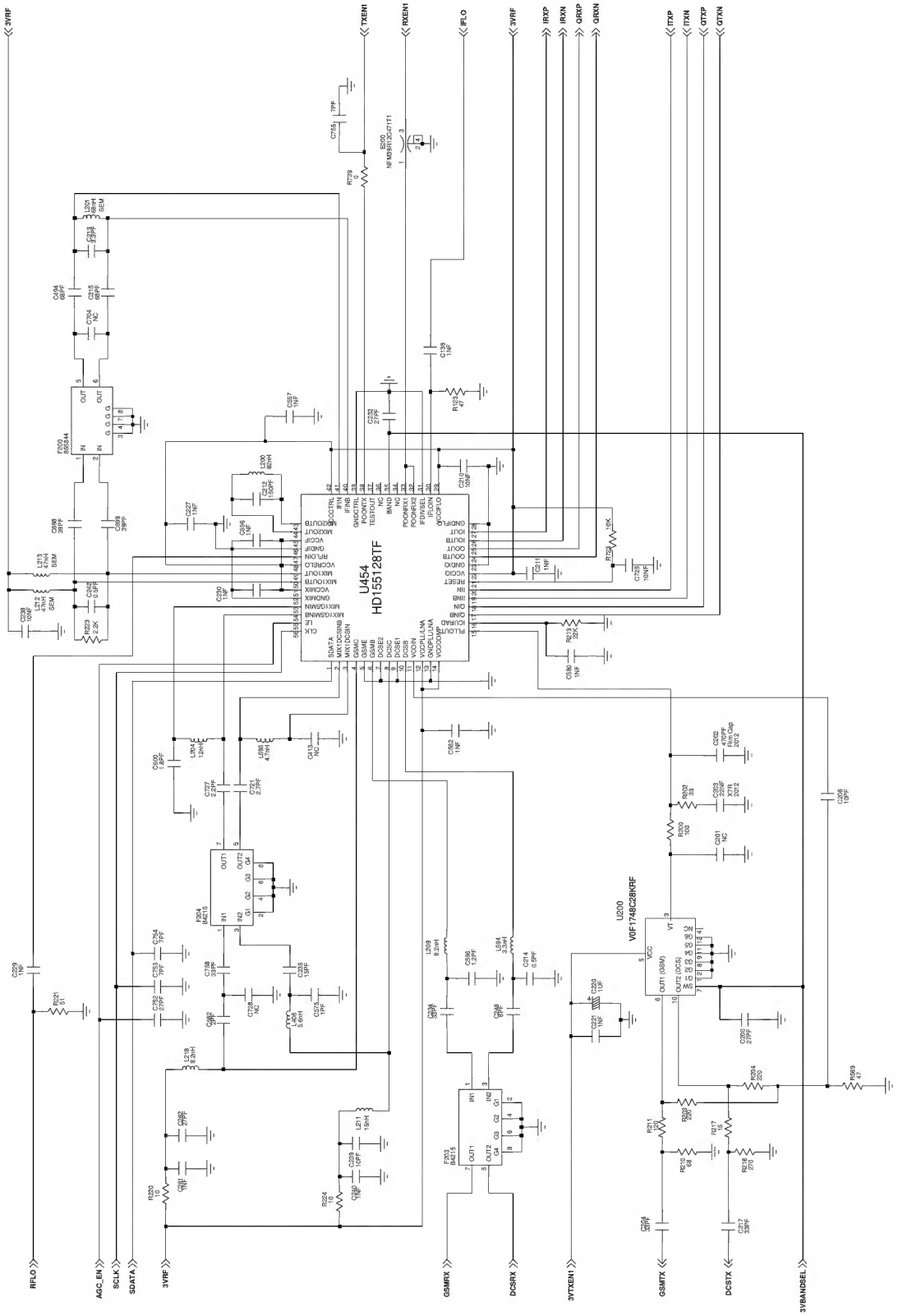
5-13 DCS Receiver

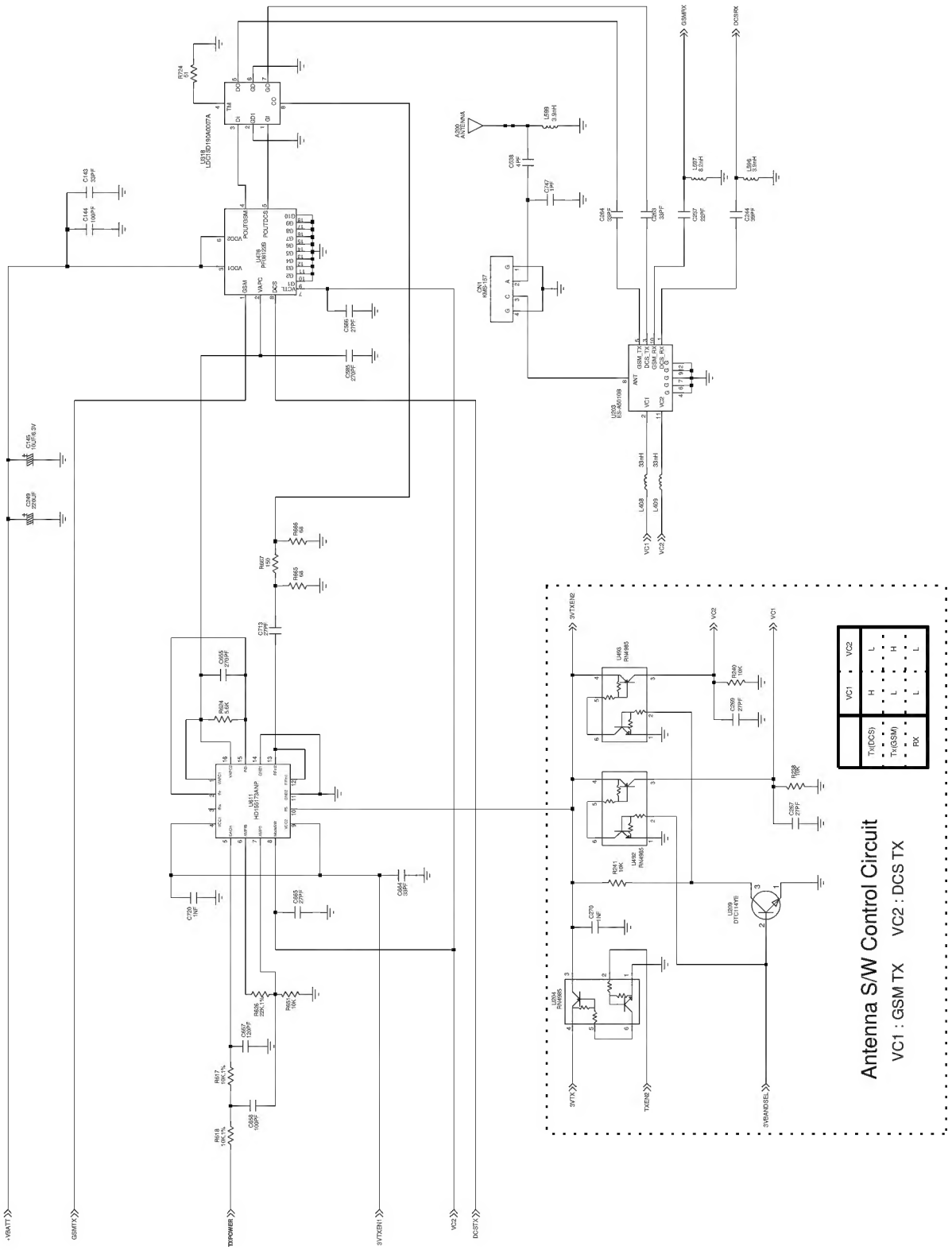


5-14 DCS Transmitter




CLK13M
3VRF
RFLO
IFLO
Q100
2SC4617
R107
560
R106
1K
R105
91K
R104
27K
R103
2.2K
R117
560
C123
10NF
C102
10NF
C101
10NF
L800
100nH
R101
10K
XVCC
AFC
U100
VC
VCC
GND
OUT
TCO-9133S(13MHz)
C114
220PF
C112
220PF
C110
220PF
C111
220PF
C126
560PF
C481
560PF
L402
2.2nH
C127
560PF
L404
100nH
L478
SM133G-XM2R
GND7
GNDR2
RFLA
RFLB
GNDR
RFLC
RFLD
GNDR4
GNDR3
GNDR5
GNDR1
RFOUT
VDDR
AUXOUT
PWDNB
GNDD2
GND5
XIN
GNDD1
VDDD
GNDD
IFLA
IFLB
GND1
GND6
SDAT
SCLK
SENB
VDDI
IFOUT
GNDI
R582
1.5K
SYNEN
SCLK
SDATA


3VRF
TXEN1
RXEN1
IFLO
3VRF
IRXP
IRXN
QRXP
QRXN
ITXP
ITXN
QTXP
QTXN
U454
HD155128TF
U200
V0F1748C28KRF
RFLO
AGC_EN
SCLK
SDATA
3VRF
GSMRX
DCSRX
3VTXEN1
GSMTX
DCSTX
3VBANDSEL


Antenna S/W Control Circuit
VC1 : GSM TX VC2 : DCS TX
VC1 VC2
Tx(DCS) H L
Tx(GSM) L H
RX L L
VBATT
GSMTX
TXPOWER
3VTXEN1
VC2
DCSTX
GSMRX
DCSRX
3VTXEN2
3VBANDSEL
VC1
VC2